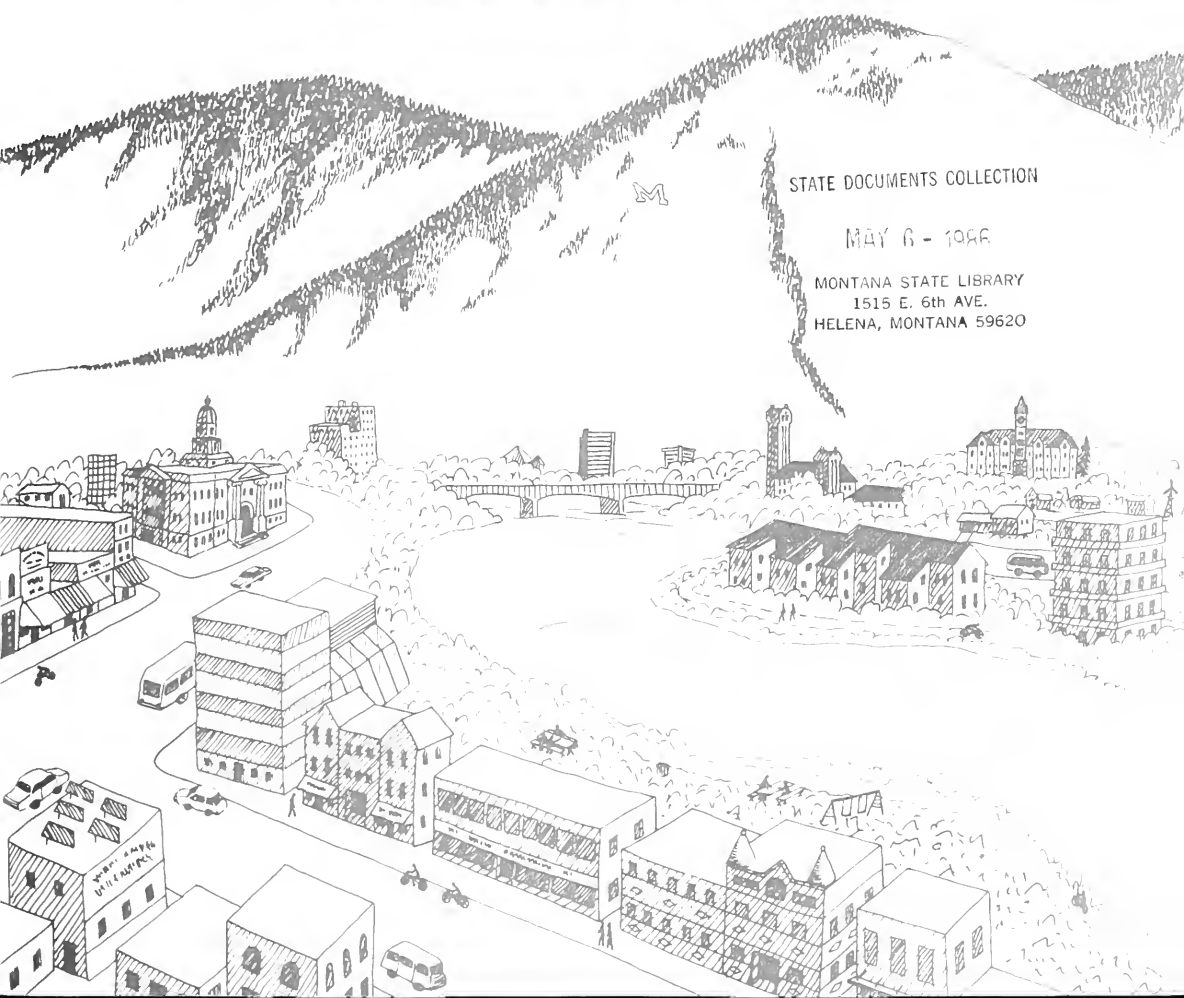


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# PROPOSED ENERGY-EFFICIENT LAND USE REGULATIONS FOR MISSOULA CITY AND COUNTY



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**PROPOSED  
ENERGY-EFFICIENT  
LAND USE REGULATIONS  
FOR MISSOULA  
CITY AND COUNTY**



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PROPOSALS FOR  
ENERGY-EFFICIENT SUBDIVISION  
REGULATIONS

Prepared by the  
Missoula Office of Community Development  
Edited, Reprinted, and Distributed  
By

THE  
MONTANA DEPARTMENT  
OF NATURAL RESOURCES AND  
CONSERVATION

AUGUST 1985





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## Acknowledgments

The Montana Department of Natural Resources and Conservation (DNRC) sponsored a grant to the Missoula Office of Community Development (OCD) to research energy conservation as it relates to subdivision regulations. This document reports the results of OCD's research.

## Note

The Department of Natural Resources and Conservation is not responsible and disclaims liability for any results or lack of results that may or may not accrue from the adoption of or failure to adopt any of the information contained in this report.

## INTRODUCTION

In November 1983, the Missoula Office of Community Development (OCD) obtained a grant from the Montana Department of Natural Resources (DNRC) to revise subdivision regulations so they would promote energy conservation. The grant funded research on energy-related regulations in other communities, literature on energy conservation, and current state and local legislation on subdivision regulations.

The energy-efficient subdivision guidelines developed by OCD, as a result of its research, were presented in two categories: policy considerations and standards. Policy considerations were intended only as recommendations or suggestions. Standards were intended to be mandatory requirements for all subdivisions.

The Missoula City Council voted unanimously on October 15, 1984, to approve the energy-efficient subdivision guidelines developed by the OCD. However, the city council changed the regulations to suggestions that are advisory only, without force of law. The suggestions are included in the City of Missoula's preliminary plat submittal packet, and OCD is available to explain the savings that may result from using the suggestions to design subdivisions.

The Missoula County Commission has held a public hearing on the proposed regulations, but has taken no further action.

Developers, landowners, and others should review these suggestions on using land as efficiently as possible. Designing subdivisions to save energy should benefit all residents of the community because the result could be more money remaining in the local economy.

These guidelines are not mandatory and will not be used alone to deny a subdivision. However, they will be considered in combination with mandatory standards in city and county subdivision regulations, and may be given considerable weight in reviewing subdivision proposals. The suggestions are reprinted below.

#### CITY OF MISSOULA ENERGY-EFFICIENT SUBDIVISION SUGGESTIONS

1. Solar Access and Topographic Considerations. When possible, solar access should be maximized by developing generally south and southeast facing slopes. North facing slopes which shade habitable structures and public roadways should be avoided.

2. Solar Access Performance Consideration. Solar access to each potential new structure should be maximized on each lot in every new subdivision. The lot lines of each lot should be oriented to provide solar access at ground level at the southern building line two hours before and after the solar zenith from September 22 to March 21. If solar access to the southern building line is not feasible, solar access should be provided at ten feet above ground level at the southern building line two hours before and after the solar zenith from September 22 to March 21.

This solar access should be protected by solar height restrictions for the benefit of the lots receiving the solar access and should be filed as part of the subdivision's restrictive covenants.

3. Solar Access Disturbance. Solar access to each potential and existing lot adjacent to the proposed subdivision should be protected through lot orientation and/or protective covenants.

4. Site Design for Solar Access. All subdivisions should be reviewed by the Planning Office in concert with the Energy Coordinator to ensure energy efficient site design and building location. The developer should identify preferred energy-efficient building sites on each parcel within a subdivision. These sites should maximize protected solar access for each lot, taking into consideration topography, and the location of roads, sewer systems or drainfields, mature vegetation, water supplies, and local meteorology.

Special care should be taken by the developer to avoid placements of structures in cold air drainages, cold air sinks, and on portions of the subdivision which receive maximum shading on December 20. The subdivision should be designed to promote usable open space which also protects solar access to lots within the subdivision. Covenants for the maintenance of open areas should be included to guarantee that these areas do not become areas of little use due to weeds, garbage, etc.

5. Conservation Through the Clustering of Buildings. Whenever possible, to promote conservation of heating and cooling resources, lots should be designed to encourage clustering of structures. This clustering is intended to maximize the efficient use of heating and cooling sources and to minimize energy losses through exterior surfaces.

6. Solar Access and Street Orientation. Streets should be designed so that 80% or more of the buildings or potential buildings within the subdivision can be oriented with their long axes parallel to 12 degrees south of west.

7. Cost Reductions Regarding the Cutting and Filling of Roadways.

Whenever possible, cutting and filling of slopes should be engineered so as to reduce road construction, road width and road maintenance while preserving automobile, bicycle, and pedestrian safety.

8. Heating/Cooling Losses and Prevailing Wind Direction. The topographic data required in Section II-A-6 of the Missoula County Subdivision Regulations (Resolutions No. 78-68) and in Section II-A-6 of the City of Missoula Subdivision Regulations (Resolution No. 3353) should include prevailing wind directions for wind speeds greater than 5 miles per hour during the heating season. The type and size of existing and proposed non-deciduous vegetation which shades or may shade buildable lots should also be shown.

9. Heat Conservation and Wind Breaks. Vegetative wind breaks should be proposed which minimize energy loss through infiltration. Wind buffers can be supplemented by designing lots that are "off-set" (that do not create corridors which channel wind) or by designing "curvilinear" streets (streets that include curves which help break-up wind corridors).

10. Solar Access and Shadow Patterns for Rural and Non-Conventional Subdivisions. Shadow patterns for all existing and proposed non-deciduous vegetation over ten (10) feet in height and all existing and proposed structures over ten (10) feet in height which shade buildable lots should be provided with the submittal application. Shadow patterns should be drawn as calculated for 10:00 a.m. and 3:00 p.m. on December 20th. Where clusters of vegetation exist, shadow patterns for the clusters should be shown where the shadow falls outside of the cluster.

11. Supply of Utility Energy. Where economically feasible, the developer should provide for access to electricity and natural gas on each lot.

12. Electrical Savings in Street Lighting. All street lighting required as a condition of approval of the subdivision shall be sodium vapor lighting, or the best available technology, spaced so as to provide maximum coverage with a minimum number of lights.

13. Mass Transit Energy Savings. Any subdivision within one-half mile of the Missoula Urban Transportation District shall petition said district for annexation and all major subdivisions within one-half mile of the District shall provide a bus pull-out approved by the District.

14. Energy Savings Through the Use of Bicycles. All subdivisions should be reviewed by the Planning Office and the Missoula Bicycle Coordinator to ensure that proper and efficient bicycle transportation is enhanced or promoted. The intent of this review is to ensure that potential community-wide bicycle paths are not permanently obstructed, that bicycle safety is not compromised and that long-range planning of bicycle transportation is promoted. It is not the intent of this section to require bicycle paths for every subdivision submitted to the governing agencies for approval.

#### OBSTACLES TO ENERGY-EFFICIENT SUBDIVISION REGULATIONS

Barriers that limit the City of Missoula and Missoula County in adopting regulations to promote energy efficiency are listed below:

1) Missoula cannot mandate that buildings in new subdivisions meet an energy-efficient code, because Montana law (MCA 50-60-301, 302, 303) does not allow local governments to incorporate building codes into subdivision regulations, or to adopt building codes more stringent than the state's. Therefore, building codes are not part of OCD's recommendations.

2) In Missoula, public sentiment is against government regulation because people fear a loss of land-use rights, or economic loss due to regulated land development. In fact, most of Missoula County is not zoned, because government officials have been sensitive to these concerns and are reluctant to propose such regulations. If energy-efficient land use becomes a public priority, regulations may become more acceptable.

3) Energy conservation measures may be obstacles to other community goals. For example, both the rural and city fire departments are opposed to reducing road widths because that could hinder emergency vehicle travel. (However, communities such as Windson, Connecticut, and Davis, California, adopted narrower roads and found no serious problems.)

4) Solar energy is not as available in Missoula as it is in the Southwest, because of mountain shadows and clouds. If solar technology improves, it may be used more often in Missoula; consequently, OCD proposes several policy considerations to address the issue.

#### DEVELOPMENT OF THE ENERGY-EFFICIENT SUBDIVISION REGULATIONS

The energy-efficient suggestions adopted by the City of Missoula were presented by OCD in two categories: policy considerations and standards. The following section provides information on the development of the policy considerations and standards. The policy considerations and standards as OCD presented them to the Missoula City Council and County Commissioners are in Appendix A.



## Policy Considerations

Policy considerations address site planning to promote energy-efficient land use, covering issues such as street orientation, and block and lot design. Missoula County's varied terrain and winter climate rule out adoption of these items as law because variances would be common. For example, the east-west orientation of streets is a sound solar planning principle, but development of east-west streets on a north-facing slope would result in increased paving, eliminating energy savings. Similarly, prohibiting development on north-facing slopes in the City of Missoula could force construction onto Mount Sentinel and Waterworks Hill, two areas targeted for preservation as open areas.

Policy considerations could be ignored by developers, since they are not law. However, by presenting policy considerations as criteria in reviewing a development proposal, the governing agency can suggest adherence to energy-related conditions. The policy considerations will be available to a developer before developmental costs are incurred.

OCD believes the policy considerations will generally promote energy savings, without burdening developers and landowners with policies that are neither cost or energy-efficient on a particular site.

Policy considerations could be adopted as standards at a later date. Should technology improve to the extent that the sun could be used more efficiently to heat buildings than is presently possible, the city and county may wish to ensure solar access for all lots in new subdivisions.

A brief description of the reason for each policy consideration follows.

## Lot Orientation and Slopes

Development of south-facing slopes is a good idea for using solar energy and reducing costs. Lots should afford structures a south-southeast exposure so solar radiation can partially heat the structure. Shadows cast on south slopes are generally shorter than those on slopes facing other directions; thus, buildings on south slopes can be closer together without obstructing the sun.

Northern slopes greater than 15 degrees have the least sun exposure, and should not be used for developments. South walls on north slopes are usually shaded, although southern roof exposure is often feasible. Not only are homes on north-facing slopes unlikely to be energy-efficient, but development on northern slopes also results in icy winter roads, requiring expensive maintenance.

## Covenants

Covenants, or deed restrictions, can protect solar access in a subdivision. Covenants are legally binding private agreements ensuring that development occurs in line with an overall plan. The advantages of using covenants for solar access are:

- 1) covenants can assure a continuous supply of sunlight; and
- 2) the cost to government is negligible; and
- 3) State and local governments can encourage or require covenants in new developments, without incurring costs for their enforcement.

## Easements

Easements, like covenants, can also protect solar access. Specifically, an easement is a right, given by the owner of land to another party, for a specific limited use of that land. A developer could provide a solar access easement for each lot. That easement would then pass in perpetuity to all future owners of that land.

## Site Design for Solar Access

Developers should build in warm areas with good sun exposure. Developers should avoid "cold pockets" and areas exposed to strong winds. Currently, a conventional house oriented south and unshaded has heating requirements 5 to 20 percent less than its shaded, improperly oriented counterpart (Kaufmann, 1985).

Vegetation, especially trees, can block the sun; the developer should analyze vegetation, both on and next to the property. If possible, buildings should not be shaded by vegetation.

It may be possible to retain existing vegetation and provide solar access. On land with scattered tall trees, the location, height, and shadow pattern of trees should be sketched to identify shading problems the trees may create. Changing lot and southern building lines will usually make it possible to leave trees standing and provide solar access.

## Solar Access and Open-space Location

Developers should use open space to provide solar access. Generally, open-space areas should be on the southern, southeastern, or southwestern part of the property to increase insolation in the proposed subdivision.

Open space, used as a garden, a park, a recreation area, or left as is, allows light between buildings. Open space on the edge of a development could prevent shading from adjacent properties. Most developments are required to have either parks or open space, so developers should use these areas to optimize solar access.

#### Solar Access and Street Orientation

Street directions either minimize wind or maximize southern exposures for buildings; developers and regulatory agencies will have to decide which benefit is most important in a particular development. Roads generally run east-west, which is parallel to prevailing winter winds, therefore east-west roads channel and accelerate the wind, increasing a building's heat requirements. North-south streets would reduce the wind's velocity, reducing its ability to draw heat from structures in its path. However, north-south streets usually require large, expensive frontages to allow for front and rear setbacks. Usually streets should be laid out in an east-west pattern (plus or minus 30 degrees).

If topography or street patterns for land bordering the development necessitate north-south streets, solar access will be limited. East-west roads provide flexibility for developers, but cause wind channeling.

Developments on north-facing slopes may have icy roads during the winter because of the lack of solar radiation. This lack of solar radiation can result in expensive road maintenance and less energy-efficient homes, too. The development of south-facing slopes increases solar radiation and reduces maintenance problems.

## Multiple Dwellings

Apartments, townhouses, and semi-detached buildings should be encouraged. These types of structures have shared walls and fewer exposed surfaces, and that reduces heat loss. "Compared to similar-sized detached housing, semi-detached housing uses about 20 percent less energy; inside units of a two-story townhouse block use 40 percent less energy than a detached house, and energy used in heating apartment units (more than two sides attached) is about 50 percent less (Middleton and Associates, 1981).

Other benefits of multiple dwellings are:

- 1) Central mechanical and electrical systems save money; and
- 2) The efficient use of heating energy resulting from shared central heating in buildings could encourage use of abundant fuel, instead of fuel in short supply.

## Standards

OCD originally intended the standards to become mandatory for each subdivision submitted to governing agencies. The criteria would usually result in energy savings for the homeowner. These standards generally apply to all sites, regardless of topography, climatic conditions, or lot design. For example, sodium street lighting is less expensive to operate than conventional lighting. Standards sometimes require a larger initial investment; however, they pay for themselves in the long run. Background on each of the standards follows.

## Proper Location of Open Space

If trees block sunlight on the south, they should be removed and leaching fields for new septic systems should be situated in the cleared area. The placement of leaching fields on the south side of the house creates opportunities for solar access.

City water or sewer line easements sometimes require clearing vegetation. These cleared swaths should be on the north side of east-west streets to remove shadow-casting vegetation. In some cases, water and sewer easements on a north-south street could remove tree stands that might otherwise block early morning or late afternoon sun.

Topography and trees channel and slow wind flows, and could be used to reduce wind-related heat loss. Topography, vegetation, and slope should be analyzed to determine how best to use these factors. Structural heat loss is twice as great in 20-mile-per-hour (MPH) winds as it is in 5-MPH winds (Olgay, 1963).

## Vegetation

Vegetation can block the sun. Shadow patterns should be drawn, to determine what vegetation should be removed and which vegetation retained.

## Lighting

Sodium vapor lighting is the most efficient lighting for residential and commercial areas. This can reduce lighting power needs by 50 percent and improve illumination levels (McLaughlin 1985).

## Roads

Reducing road widths generates savings from:

- 1) decreased installation costs;
- 2) decreased maintenance costs (sweeping, snow removal, etc.);
- 3) decreased rebuilding costs;

- 4) decreased material costs;
- 5) decreased use of private land for public use.

#### Mass Transit

Walking and bicycling are twice as efficient as city bus and rapid rail systems, and city bus and rapid rail systems are twice as efficient as automobile travel, (Fels and Munson, 1975).

In 1980, of all Missoula County residents traveling to work, 79 percent traveled by automobile, 3 percent by city bus, 4 percent by bicycle and 10 percent walked or used some other form of travel such as taxis or motorcycles (U.S. Census, 1980). Efficient transportation systems such as walking, bicycling, and bus riding should be encouraged in the design of a subdivision.

#### OTHER MISSOULA ENERGY ACTIONS

OCD is working on zoning amendments to save energy for residents. A study of zoning amendments is being funded by the Bonneville Power Administration (BPA). There are barriers to energy conservation in the zoning codes. Zoning codes preclude zero lot-line setbacks, and restrict accessory building placement. In addition to funding the zoning study, BPA has a contract with the City of Missoula and Missoula County to devise an energy management plan for the two governments. Missoula is also working to have the Code for Energy Conservation in New Building Construction strengthened by the Montana Building Advisory Council. Further, an energy task force is addressing energy concerns in updating Missoula's Comprehensive Plan.

## NONSUBDIVISION STANDARDS IN OTHER COMMUNITIES

Ordinances and resolutions adopted in other states are included in this report. OCD is including this material so the public will be aware of what other communities are doing to promote energy savings besides adopting revised subdivision regulations.

### Underground Housing

Several communities have adopted building codes that allow construction of underground houses.

### Fences and Hedges

Fences and hedges can block solar access of neighboring land. Most communities have zoning guidelines to limit fence height.

### Home Occupations

Some communities allow home businesses in residential areas. This reduces the need for travel but can cause parking problems.

### Mandatory Solar Heating

San Diego County, California, mandates use of solar water heaters in new developments.

### Density Provisions

Clustering buildings is encouraged or required in many areas. Rewards are provided, such as an increase in the number of housing units permitted per acre.

### Design Criteria

Some communities regulate design of developments so that all lots in the subdivision will have solar access.

### Solar Dryers

Davis, California, allows clotheslines.



### Parking Reductions

King County, Washington, requires fewer parking spaces if a development is close to shopping areas and mass transit routes.

### Building Height Limitations

Several communities limit building height to protect solar access.

## EVALUATION

The inability to incorporate building and zoning codes into the suggestions severely limits their effectiveness.

It should be noted that adopting new subdivision regulations will not, by itself, produce great energy savings. Zoning and building codes that could result in far greater energy savings could not be addressed for legal reasons.

The weakest part of the proposal was the lack of economic analysis. The proposed regulations could save money, but, without a precise dollar figure, the value of the suggestions is in question. The idea of energy-efficient subdivisions received support from residents, but the idea of mandating them did not. In response, the City Council did not adopt the regulations as law.

### Recommendations

OCD recommends the following activities:

1. Estimate the amount of money each new regulation could save. A precise dollar value could define the economic benefit of adopting the suggestions.
2. Have a consultant compile and present the financial data.
3. Distribute the draft regulations and final proposals to city and county agencies and the public. Currently, the public is simply informed that a document is available for inspection. This is not sufficient in Missoula.

### Costs

This report was made possible by a \$10,000 grant from DNRC. That money was supplemented by other grants and in-kind contributions. A summary of Missoula's expenses incurred in producing this report follows.

<u>ITEM</u>	<u>COST</u>
Salaries	\$9,705.36
Fringe Benefits	2,003.85
Office Supplies	55.68
Postage	46.73
Copies	88.11
Printing	137.07
Publications	5.30
Phone	91.63
 TOTAL	 \$12,133.73

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APPENDIX A

PROPOSED POLICY CONSIDERATIONS

AND

STANDARDS

AS SUBMITTED TO THE

MISSOULA CITY COUNCIL

AND COUNTY COMMISSION





## APPENDIX A

### Proposed Policy Considerations

This appendix contains OCD's energy-saving suggestions as submitted to the Missoula City Council and County Commissioners on October 15, 1984. The suggestions were divided into two categories, policy considerations and standards.

OCD recognized that variances to the policy considerations would be frequent, since they deal with energy-efficient site planning, and each site is unique. Therefore, policy considerations were intended to be guidelines for sensible site planning.

Standards, on the other hand, apply to all sites. OCD wrote the standards for adoption into Missoula's subdivision regulations.

The Missoula City Council decided to adopt both the policy considerations and standards as guidelines or suggestions for subdivision development. The Missoula County Commissioners have not yet acted on the proposals.

These policies are intended only as recommendations or suggestions. Developers, landowners and others are encouraged to review these policies in an attempt to use land in the most efficient manner possible. By designing new subdivisions to save energy for future residents, all residents of the community should benefit from the money which will then remain in the local economy. These policies are not mandatory and shall not be used alone to deny a potential subdivision. However, when combined with other mandatory standards found in city and/or county subdivision regulations, these policies should be given considerable weight when reviewing new subdivision proposals.

1. Solar Access and Topographic Considerations. When possible, solar access should be maximized by developing generally south and southeast-facing slopes. North facing slopes which shade habitable structures and public roadways should be avoided.

2. Solar Access Performance Consideration. Solar access to each potential new structure should be maximized on each lot in every new subdivision. The lot lines of each lot should be oriented to provide solar access at ground level at the southern building line two hours before and after the solar zenith from September 22 to March 21. If solar access to the southern building line is not feasible, solar access should be provided at ten feet above ground level at the southern buildings line two hours before and after solar noon from September 22 to March 21.

This solar access should be protected by solar height restrictions for the benefit of the lots receiving the solar access and should be filed as part of the subdivision's restrictive covenants.

3. Solar Access Disturbance. Solar access to each potential and existing lot adjacent to the proposed subdivision should be protected through lot orientation or protective covenants.

4. Site Design for Solar Access. All subdivisions should be reviewed by the Planning Office in concert with the Energy Coordinator to ensure energy efficient site design and building location. Special care should be taken by the developer to avoid placements of structures in cold air drainages, cold air sinks, and on portions of the subdivision which receive maximum shading on December 21. The subdivision should be designed to promote usable open space which also protects solar access to lots within the subdivision. Covenants for the maintenance of open areas should be included to guarantee that these areas do not become areas of little use due to weeds, garbage, and the like.

5. Conservation through the Clustering of Buildings. Whenever possible, to promote conservation of heating and cooling resources, lots should be designed to encourage clustering of structures. This clustering is intended to maximize the efficient use of heating and cooling sources and to minimize energy losses through exterior surfaces.

6. Solar Access and Street Orientation. Streets should be designed so that at least 80 percent or more of the buildings in the subdivision can be oriented with their long axis parallel to 12 degrees of true south.

7. Cost Reductions Regarding the Cutting and Filling of Roadways. Whenever possible, cutting and filling of slopes should be engineered to reduce road construction, road width, and road maintenance, while preserving automobile, bicycle, and pedestrian safety.

8. Heating/Cooling Loses and Prevailing Wind Direction. The topographic data required in Section II-A-6 of the Missoula County Subdivision Regulations (Resolutions No. 78-68) and in Section II-A-6 of the City of Missoula Subdivision Regulations (Resolution No. 3353) should include prevailing wind directions at 6:00 a.m. and 6:00 p.m. during the heating season. The type and size of existing and proposed non-deciduous vegetation which shades or may shade buildable lots should also be shown.

9. Heat Conservation and Wind Breaks. Vegetative wind breaks should be proposed which minimize energy loss through infiltration. Wind buffers can be supplemented by designing lots that are "off-set" (that do not create corridors which channel wind) or by designing "curvilinear" streets (streets that include curves which help break-up wind corridors).

10. Solar Access and Shadow Patterns for Rural and Non-Conventional Subdivisions. Shadow patterns for all existing and proposed non-deciduous vegetation over ten feet in height and all existing and proposed structures over ten feet in height which shade buildable lots should be provided with the submittal application. Shadow patterns should be drawn as calculated for 10:00 a.m. and 3:00 p.m. on December 21st. Where clusters of vegetation exist, shadow patterns for the clusters should be shown where the shadow falls outside of the cluster.

#### Proposed Standards

These standards are mandatory and shall be met by all subdivisions.

1. Solar Access and Septic Drainfields. Whenever possible, drainfields shall be located to the south of structures in order to promote solar access to the structure.

2. Solar Access and Shadow Patterns for Urban Subdivisions. Shadow patterns for all existing and proposed non-deciduous vegetation over ten (10) feet in height and all existing and proposed structures over ten (10) feet in height which shade buildable lots shall be provided with the submittal application. Shadow patterns shall be drawn as calculated for 10:00 a.m. and 3:00 p.m. on December 20th. Where clusters of vegetation exist, shadow patterns for the cluster shall be shown where the shadow falls outside of the cluster.

3. Electrical Savings in Street Lighting. All street lighting required as a condition of approval of the subdivision shall be sodium vapor lighting, or the best available technology, spaced so as to provide maximum coverage with a minimum number of lights.

4. Cost Reductions Through Reduced Roadway Widths. The following roadway widths shall be the maximum permitted for developments intended only for residential purposes:

For cul-de-sacs without parking on either side of the street: 20 feet.

For one-way loop streets without parking on either side of the street: 12 feet.

For other standard driving widths, see Section III-A-6 of the Missoula County Subdivision Regulations (Resolution No. 78-68) and Section III-A-6 of the City of Missoula subdivision regulations (Resolution No. 3353).

5. Mass Transit Energy Savings. Any subdivision within one-half mile of the Missoula Urban Transportation District shall petition said district for annexation and all major subdivisions within one-half mile of the District shall provide a bus pull-out approved by the District.

6. Energy Savings Through the Use of Bicycles. All subdivisions shall be reviewed by the Planning Office and the Missoula Bicycle Coordinator to ensure that proper and efficient bicycle transportation is enhanced or promoted. The intent of this review is to ensure that potential community-wide bicycle paths are not permanently obstructed, that bicycle safety is not compromised and that long-range planning of bicycle transportation is promoted. It is not the intent of this section to require bicycle paths for every subdivision submitted to the governing agencies for approval.



APPENDIX B

CORRESPONDENCE AND COMMENTS ON

THE PROPOSED SUBDIVISION REGULATIONS





## APPENDIX B

### CORRESPONDENCE AND PUBLIC COMMENT

In February 1984, approximately 100 letters were sent to individuals and groups in the community asking for comments on saving energy when designing new subdivisions. The mailing list and responses to the mailing are contained in this appendix.

Television and radio interviews on the proposals and newspaper articles brought no additional comment from the public, nor did a second letter to people on the mailing list.

The proposals were reviewed by the Missoula Valley Energy Conservation Board, and at public hearings by the Missoula Planning Board, the Missoula City Council, and the Missoula Board of County Commissioners. Letters from these organizations are in this appendix.



## MISSOULA PLANNING OFFICE

201 WEST SPRUCE • MISSOULA, MONTANA 59802  
(406) 721-4700

### MEMORANDUM

TO: All Interested Parties

FROM: Patrick O'Herren and Barbara Martens

DATE: February 15, 1984

RE: City and County Subdivision Regulations

The Missoula Planning Office is currently reviewing City and County subdivision regulations in an effort to promote energy efficient developments. The staff has requested and received information from other communities and government agencies regarding such matters as building materials, roadway widths, lighting and construction materials, development and siting suggestions. We are now in the process of soliciting help from interested governmental and private agencies. If you would like to review the information we have received to date or if you wish to offer suggestions, please feel free to contact either of us at your earliest convenience.

The staff's goal is to accomplish the researching and drafting of the revised regulations by mid-March. We then hope to complete the public hearing process by June 4th with a target date of adoption of July 4, 1984. Consequently, we would appreciate hearing from you as soon as possible. If your comments are received before March 2, 1984, you can be assured that they will be studied by the reviewing agencies.

Please call if you have any questions or suggestions. We look forward to hearing from you before the 2nd of March.

PO:BM:la



REVIEW AND COMMENT LIST

Revised 2/15/94

Glenn Hoffman  
Mt. Jumbo  
735 Michigan  
Missoula, MT 59801

Cliff Brager/Ed Hogan  
Missoula Irrigation District  
2200 Brooks  
Missoula, MT 59801

Lloyd Harrison  
Missoula County RSID #901  
P.O. Box 476  
Lolo, MT 59847

Mike Weigel  
Crime Prevention Officer  
City Hall

Lee Hagone  
Mountain Water  
1345 West Broadway  
Missoula, MT 59801

James Hall, Superintendent  
Lolo Grade School  
Lolo, MT 59847

Board of County Commissioners  
Missoula County Courthouse  
Missoula, MT 59801

Jim Ford  
Dept. of Fish, Wildlife & Parks  
3201 Spurgin Rd.  
Missoula, MT 59801

John Marron  
State Highway Department  
West Broadway  
Missoula, MT 59801

Sue Buskirk  
Mountain Bell  
1550 South 14th St. West  
Missoula, MT 59801

Kit Sutherland  
District Conservationist  
Soil Conservation Service  
2300 West Broadway  
Missoula, MT 59802

Carrier Foreman  
U.S. Postal Service  
1100 West Kent  
Missoula, MT 59801

Jim Van Fossen  
Parks & Recreation Dept.  
City Hall  
Missoula, MT 59801

Ed Zulegar  
Environmental Health Director  
Missoula City/County Health Dept.  
Missoula, MT 59801

Dick Colvill  
County Surveyor  
Missoula County Courthouse  
Missoula, MT 59801

Ray Froelich, Sheriff  
Missoula County Courthouse  
Missoula, MT 59801

Pete Mion  
Building Inspector  
City Hall  
Missoula, MT 59802

Bruce Suenrum, Chief  
Missoula Rural Fire Dept.  
2521 South Ave. West  
Missoula, MT 59801

Bernie Walsh  
Missoula City Fire Dept.  
200 West Pine  
Missoula, MT 59802

Ken Clawson  
Montana Power Co.  
1903 Russell  
Missoula, MT 59801

Mike Bowman  
Superintendent of Schools  
301 West Alder  
Missoula, MT 59801

Mayor John Toole  
Missoula City Hall  
Missoula, MT 59801

Dr. Dennis Kraft  
Superintendent  
Hsla County High School  
Missoula, MT 59801

Joe Aldegarie  
City Engineer  
City Hall

Robert M. Banks - Supt.  
Frenchtown School Dist. #40  
Frenchtown, MT 59834

Shirley Day- Supervising Teacher  
District School District #20  
Butler Creek  
Missoula, MT 59801

C.D. Beagle, Supt.  
Target Range School Dist. #23  
4095 South Avenue West  
Missoula, MT 59801

Beth Thomas, Supervising Teacher  
Sunset School Dist. #30  
Greenough Mt. 59836

Ben Harrison, Supt.  
Clinton School Dist. #32  
Clinton, MT 59825

Gerald Blank, Supervising Teacher  
Swan Valley School Dist. #33  
Star Route  
Seeley Lake, MT 59868

Carl McCham, Supt.  
Seeley Lake School Dist. #34  
Seeley Lake Mt. 59868

Missoula Elementary School Dist. #1  
215 South 6th West  
Missoula, MT 59801

Don Waldron, Supt.  
Hellgate Elementary School District #4  
2385 Flynn Lane  
Missoula, MT 59801

John Smith, Supt.  
Lolo Elementary School Dist. #7  
Lolo, MT 59847

Celeste Craig, Supervising Teacher  
Potomac School Dist. #11  
Star Route  
Bonner, MT 59823

Jack Demmons, Supt.  
Bonner School Dist. #14  
Bonner, MT 59823

Janet Holmes, Supervising Teacher  
Woodman School Dist. #18  
Star Route  
Lolo, MT 59847

Dick Betts  
Bureau of Land Management  
U.S. Dept. of Interior  
P.O. Box 4427  
Missoula, MT 59806

Chuck Wright  
Division of Forestry  
Department of State Lands  
2705 Spurgin Rd.  
Missoula, MT 59801

John R. Hammill, Supervisor  
Floodplain Management Bureau  
Dept. of Natural Resources  
& Conservation  
Water Resources Division  
32 S. Ewing  
Helena, MT 59620

Dept. of State Lands  
Reclamation Division  
1625 Eleventh Avenue  
Helena, MT 59620

Department of State Lands  
Environmental Analysis Bureau  
1539 Eleventh Avenue  
Helena, MT 59620

Missoula Ranger District  
Lolo National Forest  
James N. Dolan, District Ranger  
2801 Russell Street  
Missoula, MT 59801

Ninemile Ranger District  
Lolo National Forest  
Jerry D. Covault, District Ranger  
Huson, MT 59846

Pattee Canyon Homeowner's Association  
c/o Joanne Rubie  
2250 Pattee Canyon Road  
Missoula, MT 59801

Stone Mountain Neighborhood Association  
c/o Hans Zuuring  
805 Continental  
Missoula, MT 59801

University Area Homeowner's Association  
c/o Donn F. Patterson (Jack)  
304 S. 5th St E.  
Missoula, MT 59801

Wapikiya Neighborhood Association  
c/o Lois Harris  
117 Arrowhead  
Missoula, MT 59801

Lincoln Hills Homeowner's Association  
c/o Bob Wuttke  
3095 Lincoln Hills Dr.  
Missoula, MT 59801

Friends of the Rattlesnake  
c/o Cass Chinske  
717 Cherry  
Missoula, MT 59802

Northside Neighborhood Association  
c/o Sue Seymour  
521 Defoe  
Missoula, MT 59802

Westside Neighborhood Association  
c/o Linda Wheeler  
1238 Phillips  
Missoula, MT 59801

Clark Fork Homeowner's Association  
c/o Beatrice Hudson  
706 Walker  
Missoula, MT 59801

East Missoula Community Association  
c/o Sue Ballas  
315 Minnesota  
East Missoula, MT 59802

Riverfront Neighborhood Association  
c/o Richard Gotshalk  
304 S. 2nd St. W.  
Missoula, MT 59801

Limesprings Homeowner's Association  
c/o Kay Cain  
7905 Limesprings Trail  
Missoula, MT 59801

Hawthorne Homeowner's Association  
c/o Lonnie Hodges  
2606 View Drive  
Missoula, MT 59801

Mullan Road Homeowner's Association  
c/o Maureen Edwards  
2365 Flynn Lane  
Missoula, MT 59801

Orchard Homes Country Life Club  
c/o Bob Bakke  
44 Maryland Drive  
Missoula, MT 59801

El Mar Estates Homeowner's Association  
c/o Gordon Terry  
1915 Oriole  
Missoula, MT 59801

Reserve Street Homeowner's Association  
c/o James Jewell  
1704 Reserve Street  
Missoula, MT 59801

Target Range Homeowner's Association  
c/o Paul Pramenko  
3734 Rose Crest  
Missoula, MT 59801

Hillview Heights #2 Homeowner's Association  
c/o Steve Kuburich  
4904 Clearview  
Missoula, MT 59801

1st Hillview Homeowner's Association, Inc.  
c/o Russ Livergood  
102 Oakhurst Ct.  
Missoula, MT 59801

Cold Springs Homeowners Association  
c/o Charles Johnson (Chip)  
4500 Kaniku  
Missoula, MT 59801

Grantland and Colorado Gulch Homeowners  
Phil Barney  
8755 St. Vrain Way  
Missoula, MT 59801

Lolo National Forest  
David R. Whitmer, District Ranger  
Box 17  
Seeley Lake, MT 59858

Stevensville Ranger District  
Bitterroot National Forest  
Dale S. Thacker, District Ranger  
Stevensville, MT 59870

John Grew  
Urban Transportation District  
P.O. Box 8183  
Missoula, MT 59807

Department of State Lands  
Southwestern Land Office  
Fields Operation Division  
1401 27th Avenue  
Missoula, MT 59801

Seeley/Condon Chamber of Commerce  
President: LeRoi Smith  
P.O. Box 506  
Seeley Lake, MT 59868

OUTSIDE URBAN AREA - HOMEOWNERS ASSOC.

Revised 2/15/84

Barney Jette  
Swan Valley Citizen Advisory Group  
Seeley Lake, MT 59868

C.B. Rich  
Seeley Lake Planning Association  
Seeley Lake, MT 59868

Hank Getz  
Potonac-Greenough Citizen Advisory Group  
Greenough, MT 59836

Roger Norton  
Clinton Citizen Advisory Group  
Clinton, MT 59825

Tony Terzo  
Bonner Citizen Advisory Group  
Bonner, MT 59823

Gene Simpson  
Frenchtown Citizen Advisory Group  
Frenchtown, MT 59834

Will Deschamps  
Hellgate Citizen Advisory Group  
3721 Grant Creek Road  
Missoula, MT 59801

Golden West Homeowners Assoc.  
c/o Ernie Hutton  
1600 Hayes Drive  
P.O. Box 7091  
Missoula, MT 59807

Touchette Homeowners Association  
Dick Carter  
17071 Touchette Lane  
Frenchtown, MT 59834

Linda Vista  
Gary Turbak  
6217 Linda Vista  
Missoula, MT 59801

Miller Creek Homeowners Assoc.  
c/o Ray O. Jensen  
9155 Miller Creek Road  
Missoula, MT 59603

Lower Rattlesnake Neighborhood Association  
c/o April Burke  
930 Cherry  
Missoula, MT 59801

Rattlesnake Valley Alliance  
c/o Vito Ciliberti  
1 Carriage Way  
Missoula, MT 59801

Hillview Heights #3 and #4  
c/o Larry McLaughlin  
5606 Hillview Way  
Missoula, MT 59801



SUBDIVISION - CONSULTANTS, GEOLOGISTS AND SURVEYORS

Revised 2/15/84

Zenon Zazula  
Underwood & Associates  
P. O. Box 4883  
Missoula, MT 59806

Lli & Associates  
P.O. Box 7402  
Missoula, MT 59807

Snellton & Associates  
1719 Dearborn  
Missoula, MT 59801

Nick Kaufman  
Sorenson & Co.  
P.O. Box 3413  
Missoula, MT 59806

Terry Druyvestein, Chip Johnson  
and Gary Stensatter  
Stensatter, Druyvestein & Assoc.  
1018 Burlington  
Missoula, MT 59801

Dick Ainsworth  
Professional Consultants, Inc.  
P.O. Box 3415  
Missoula, MT 59806

John Crowley  
619 S.W. Higgins  
Suite R  
Missoula, MT 59801

Greg Martinson  
P.O. Box 2542  
Missoula, MT 59806

Cecil Owen  
1622 Bellvue Drive  
Missoula, MT 59801

Bob Steele  
Lolo Creek  
Lolo, MT 59847

Louis Maillet  
2010 26th Avenue  
Missoula, MT 59801



# MISSOULA COUNTY

MISSOULA COUNTY SURVEYOR

Missoula County Courthouse  
Missoula, Montana 59802  
Telephone (406) 721-5700

**RECEIVED**  
FEB 16 1984  
MISSOULA PLANNING BOARD

February 16, 1984  
S84-073

Planning Staff  
201 West Spruce  
Missoula, Montana 59802

ATTN: Patrick O'Herren and Barbara Martens

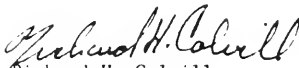
Dear Mr. O'Herren and Ms. Martens:

Reference your February 15, 1984 letter pertaining to your current review of the subdivision regulations to "Promote Energy Efficient Developments."

I agree that the subdivision regulations are badly in need of revision. I believe your current effort to review them from energy aspects only may make the regulations worse not better. A single issue revision such as you are attempting has a potential of creating more problems than it solves. For example, a reduction of paving width could save paving oil, but it also could increase congestion and increase maintenance costs. I strongly recommend you undertake a comprehensive revision of the subdivision regulations so their impact on all aspects of the community can be considered.

I would like to review the regulations you developed as they are prepared for public, planning board and commissioner review.

Sincerely,

  
Richard H. Colvill  
County Surveyor

RHC/dcm

cc: Commissioners

To: Patrick O'Herren  
Barbara Martens

From: Ludvig G. Browman

Date: Feb. 29, 1984

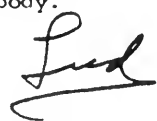
Re: Your letter of Feb. 15, 1984.

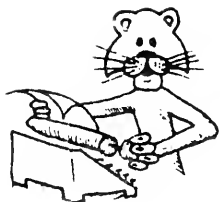
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PLANNING BOARD

Here are a few ideas re. sub-divisions.

1. The R-O-W on county roads shall be not less than 100 ft.
2. In urban areas the minimum R-O-W for streets shall be not less than 60 ft.
- 3.
3. Every street (or alley) or road in a sub-division must have utility corridor for utility services of not less than 20 feet along each street. This corridor also provides for snow storage
4. Developments on hillsides must have streets that roughly parallel contour lines with no street more than 5° of from horizontal. Cornering or "Switchbacks" should be generous enough to allow loaded trucks to meet safely.
5. Sub-divisions that have lots of 15,000 sq. ft. or less in the development must have pavement with curbs, gutters and sidewalks and adequate drainage provided by the developer. All plans must be approved by the local government surveyor and the planning Board.
6. The minimum width of paved streets in urban area shall be 42 feet. The minimum width of paved roads in rural areas must be at least 32 feet, with 8 feet of gravel shoulders on both sides of the road. Borrow pits are included in the R-O-W for snow storage. Wooden viaducts, or wooden bridges, require special written approval from the County Surveyor, the rural fire department, the planning board, and the County Commissioners.
7. The developer must pave all roads, streets as well as provide sidewalks along at least one side of the road or street in the development.
8. The developer must provide street lighting in accordance with modern standards and building codes as approved by the Planning Board.
9. The developer must provide functional (water supply) fire hydrants at distances approved by the rural fire department (or city) in line with Insurance Co. standards, and approved by the planning board.
10. Drainage control, such as driveways, streets, runoffs, drainage systems must be provided by the developer and must meet the standards of the local gov't surveyor, Flood control office, the Planning Board, and the governing body.





**RECEIVED**  
OCT 11 1983  
**mountain line**  
Missoula Urban Transportation District.  
P.O. Box 8183, Missoula, Montana 59807 (406) 543-8386  
MISSOULA PLANNING BOARD

October 6, 1983

Ms. Barbara Martens  
Missoula Planning Office  
Missoula City Hall  
201 W. Spruce  
Missoula, MT 59802

Dear Barbara:

I am writing to you with regards to a problem the District is facing as a result of subdivision development in the Missoula area. The problem can best be illustrated by citing the area above 55th Street in the South Hills as an example. When the District's boundaries were originally set, 55th Street was used as a boundary because there was little, if any, residential development south of 55th Street. Subsequently, substantial residential development has taken place in this area with the result that residents of the area are able to walk down to 55th Street and make full use of Mountain Line service without paying taxes for same.

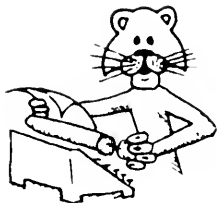
As you are aware, the District is considering the annexation of the Mullan Road area out to El Mar Estates. In light of the situation that has taken place with the area south of 55th Street as described above, we are concerned that we include in the annexation not only the areas currently developed into residential units, but also those areas with potential for future development as residential subdivisions. Unfortunately, it is extremely difficult to forecast where future residential development will take place.

I am requesting that the Missoula Planning Office staff evaluate the feasibility of adding a provision to the subdivision regulations requiring a developer of a new residential area to petition for annexation into the urban transportation district when the subdivision lies in close proximity to existing district boundaries. The exact distance criteria can be set after further study of this matter. Such a provision would prevent the District from facing the situation that has occurred with development south of 55th Street and would also avoid the need for anticipating where future residential development may take place when reviewing annexation requests.

Please inform me of the feasibility of including such a provision in the regulations addressing subdivision development. Thank you for your attention to this matter and for your assistance in reviewing future residential development along Mullan Road.

Sincerely,

John R. Grew,  
General Manager



# mountain line

Missoula Urban Transportation District.  
P O. Box 8183, Missoula, Montana 59807 (406) 543-8386

RECEIVED  
FEB 27 1984

MISSOULA PLANNING BOARD

February 24, 1984

Ms. Barbara Martens  
Missoula Planning Office  
City Hall  
201 W. Pine  
Missoula, MT 59802

RE: City and County Subdivision  
Regulations

Dear Ms. Martens:

I am writing to you in response to your memorandum of February 15 and as a follow-up to District General Manager John Grew's correspondence to you dated 10-6-83 (attached). I am requesting that the Missoula Planning Office include a provision to revised subdivision regulations requiring a developer to petition the District Board for annexation into the urban transportation district when the subdivision will lie in close proximity to existing district boundaries. Such a provision would promote efficient transportation energy utilization and would resolve the problems experienced by the District as outlined in John Grew's 10-6-83 letter.

Please feel free to discuss this matter further with John Grew. Thank you for your assistance with this matter.

Sincerely,

Marvin Enderlin,  
Chair of Board

ME:ac  
Enclosure

MUNICIPAL DESIGN  
DIVISIONS  
TOPOGRAPHIC MAPPING  
URBAN & FOREST HIGHWAYS  
AIRPORTS  
CONSTRUCTION LAYOUT  
PROPERTY SURVEYING  
HYDROGRAPHIC SURVEYS  
CADASTRAL SURVEYS  
STRUCTURAL DESIGN  
GEODETIC SURVEYS

*Jensen & Company*

ENGINEERING CONSULTANTS  
SURVEYING CONSULTANTS

P.O. Box 3418  
2500 MURPHY

*Missoula, Montana 59806*

(406) 728-4611

MEMBER  
CONSULTING ENGINEERS' COUNCIL  
AMERICAN SOCIETY OF CIVIL ENGINEERS  
NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS  
MONTANA SOCIETY OF ENGINEERS  
MARLS  
AMERICAN WATERWORKS ASSN

March 9, 1984

Pat O'Herron & Barbara Martens  
Missoula Planning Office  
201 W. Spruce  
Missoula, MT 59802

Dear Barb & Pat:

Thank you for the opportunity to comment in a general fashion on the proposal to prepare energy efficient subdivision regulations. Also, thank you for opening your files to me.

I have the following suggestions relative to energy and subdivision regulations:

- a. Keep them simple.
- b. Solar access should be an absolute in terms of protection from encroachment of future buildings and trees.
- c. Lot orientation and aspect to promote better solar access should be encouraged.

I do not wish to philosophize on the necessity of subdivision regulations. Your combined expertise and experience makes my credentials pitiful by comparison. However, somewhere between occasional sales and the perfect subdivision is a medium which incorporates good planning, economical services, energy efficiency and affordable housing. I wish you luck in your quest.

Sincerely,

*Nick Kaufman*

Nicholas P. Kaufman

NPK/lf

**RECEIVED**  
MAY 13 1984

**MISSOULA PLANNING BOARD**

3250 Pattee Canyon Road  
Missoula, Montana 59803  
July 16, 1984

Dear Members of the Planning Board:

I am writing concerning the proposed Energy Efficient Subdivision Regulations and Policies.

Over the past twelve years I have been involved with energy questions and problems both professionally and as a concerned citizen. Professionally the involvement has come through teaching energy courses at the University of Montana and working on various aspects of the problem through research grants and contracts. As a citizen I served first on Governor Judge's "Citizens Advisory Council on Energy" then on former Commissioner Browman's Missoula Energy Forum, and in recent years as both an unofficial and an appointed member of Missoula's Energy Board. I believe that I have a good appreciation of the real need for policies and regulations concerning energy use and conservation, and I have a pretty fair idea of how other communities around the country are dealing with the problem.

I strongly recommend that you accept the proposed energy regulations and policies. The final document is the result of a great deal of well done research by the Planning Department, and review by both the Missoula Energy Coordinator's Office and the Missoula Energy Board. The regulations and policies are not as stringent as those now in force in many cities and counties around the country, but they are carefully tailored to meet our needs within the constraints of prevailing laws.

These policies/regs will, of course, not meet all of Missoula County's energy conservation needs. The present energy inefficient housing stock and the lack of solar access (for example) in current subdivisions were natural mistakes made at times when energy supply was not a problem and energy costs were cheap and getting cheaper. The policies and regulations you are considering will help householders in the next decade and in the next century. They will thank you for your foresight in approving them.

Sincerely,



Ronald E. Erickson

May 22, 1984

Barbara Martens  
Missoula Planning Office  
201 W. Spruce  
Missoula, MT 59802

Dear Ms. Martens:

The Missoula Valley Energy Conservation Board wishes to thank you for presenting for our review the proposed "Energy Efficient Subdivision Regulations".

The Board would like you to make the changes deemed appropriate from the tape of our meeting. When this is accomplished, please contact Lois Jost and we'll set up a meeting for final Board review.

As you are aware, the Board generally supported the proposed regulations and I anticipate their approval for forwarding to the Planning Board when we next convene.

There were two items worth additional mention:

1. The Board feels the "Energy Regulations" can be incorporated into the existing subdivision regulations without rewriting the entire subdivision regulations.
2. Submittal to the Planning Board should be timely but sensitive to due process to allow full citizen participation. The Board feels this approach will reduce unanticipated future delays as the regulations are tempered in the heat of public debate.

Sincerely,

*Nick Kaufman*  
Nicholas P. Kaufman

NPK/lf

**RECEIVED**  
MAY 23 1984

**MISSOULA PLANNING BOARD**






MISSOULA

## MISSOULA PLANNING OFFICE

201 WEST SPRUCE • MISSOULA, MONTANA 59802

(406) 721-4700

### MEMORANDUM

TO: Mike Barton  
FROM: Patrick O'Herren   
DATE: April 25, 1984  
RE: Energy Efficient Subdivision Regulations

DRAFT

Enclosed with this memorandum is a copy of the staff's proposed subdivision regulation amendments which are intended to promote energy efficient development in Missoula County. These regulations are in the draft stage and will be presented to the Missoula Valley Energy Conservation Board on May 17th. While we had originally intended to present the amendments to the Missoula Planning Board in April and May, staff decided to approach the Energy Conservation Board to obtain its approval and support prior to the Planning Board hearing. Consequently, there will be at least a one month delay in the adoption of any amendments to the existing City and County subdivision regulations.

You will also find copies of the responses to our request for comments from private and government agencies regarding the project. Unfortunately, we did not receive a great deal of input despite sending out approximately 100 inquiries. One positive response originated with the Missoula Urban Transportation District which asked the staff to "evaluate the feasibility of adding a provision to the subdivision regulations requiring a developer of a new residential area to petition for annexation into the urban transportation district when the subdivision lies in close proximity to existing district boundaries." At the other end of the spectrum, Richard Colvill, County Surveyor, stated that:

"I agree that the subdivision regulations are badly in need of revision. I believe your current effort to review them from energy aspects only may make the regulations worse not better. A single issue revision such as you are attempting has a potential of creating more problems than it solves. For example, a reduction of paving width could save paving oil, but it could also increase congestion and increase maintenance costs. I strongly recommend you undertake a comprehensive revision of the subdivision regulations so their impact on all aspects of the community can be considered."



Mike Barton  
April 25, 1984  
Page two

It has been apparent throughout the project that the review of subdivision regulations without a concomitant review of zoning and building codes will be of less than optimum value. A number of communities have incorporated all three areas into a comprehensive energy saving review of ordinance requirements. (As an example, clustering of structures is encouraged to reduce the number of outside walls, to reduce the length and number of driveways, etc. However, given our state statutes, clustering can only be addressed through zoning codes which set density limits and setbacks. In addition, Montana state building codes prevent local governing agencies from adopting regulations which would address energy saving techniques such as those recommended by the Northwest Power Planning Council.) Despite this limitation, the energy task force (a group charged with updating the energy element of the Missoula Comprehensive Plan) will be suggesting issues, goals and policies that will help implement energy conservation matters throughout the county. Thus, while the optimal approach is not being pursued (that of reviewing subdivision, zoning and building code regulations concurrently), we should be able to make at least marginal gains while setting the parameters for further study.

A copy of the staff's report to the Energy Conservation Board precedes the regulations. If you have any questions on the report or on the regulations themselves, please feel free to contact me at your earliest convenience.



## MISSOULA PLANNING OFFICE

201 WEST SPRUCE • MISSOULA, MONTANA 59802  
(406) 721 4700

### Memorandum

TO: Kristina Ford  
FROM: Patrick O'Herren  
DATE: April 10, 1984  
RE: Grant Funded Regulation Review

#### ENERGY EFFICIENT SUBDIVISION REGULATIONS

(Montana Department of Natural Resources and Conservation)

In November of 1983, the Missoula Planning Staff obtained a grant to revise existing subdivision regulations to better conserve energy for City and County residents. The grant, sponsored by the Montana Department of Natural Resources and Conservation, entailed the researching of energy-related regulations in other communities, of literature pertaining to energy conservation and of existing state and local legislation as it relates to subdivision regulations. The staff also contacted approximately 100 individuals and agencies (both public and private) in the Missoula urban area in an attempt to obtain input prior to public hearings on proposed amendments to the City and County's regulatory ordinances.

On April 26th, the staff will present several proposed subdivision regulation amendments to the Missoula Valley Energy Conservation Board for their review. It is our hope that the Board will provide both their expertise and support when the amendments are presented to the Planning Board and the governing agencies in the next few months.



## ENERGY EFFICIENT ZONING REGULATIONS

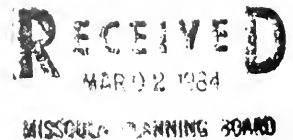
(Bonneville Power Administration)

The Department of Natural Resources grant is intended to help study subdivision regulations while the Bonneville Power Administration has requested the Planning Staff to review existing zoning regulations. This review is intended to address those items which subdivision regulation cannot impact: setbacks, height restrictions, clustering so as to save energy costs, etc. The staff has divided this study into two separate parts:

1. A review of energy-related issues identified by the Energy Task Force (one of several task forces reviewing Missoula's Comprehensive Plan); and
2. A review of existing "barriers" to energy-efficient development imposed by current zoning codes.

The progress of the DNRC study has pointed out the necessity to include review of three forms of regulation that impact energy consumption: subdivision, zoning and building codes. By addressing at least two of these areas, the community may be able to save a considerable amount of energy-related money in the future.

To: Patrick O'Herren  
Barbara Martens



From: Ludvig G. Browman (Retired County Commissioner)

Date: Feb. 29, 1984

Re: Your letter of Feb. 15, 1984.

Here are a few ideas re. sub-divisions.

1. The R-O-W on county roads shall be not less than 100 ft.
2. In urban areas the minimum R-O-W for streets shall be not less than 60 ft.
- 3.
3. Every street (or alley) or road in a sub-division must have utility corridor for utility services of not less than 20 feet along each street. This corridor also provides for snow storage
4. Developments on hillsides must have streets that roughly parallel contour lines with no street more than 5° of from horizontal. Cornering or "Switchbacks" should be generous enough to allow loaded trucks to meet safely.
5. Sub-divisions that have lots of 15,000 sq. ft. or less in the development must have pavement with curbs, gutters and sidewalks and adequate drainage provided by the developer. All plans must be approved by the local government surveyor and the planning Board.
6. The minimum width of paved streets in urban area shall be 42 feet. The minimum width of paved roads in rural areas must be at least 32 feet, with 8 feet of gravel shoulders on both sides of the road. Borrow pits are included in the R-O-W for snow storage. Wooden viaducts, or wooden bridges, require special written approval from the County Surveyor, the rural fire department, the planning board, and the County Commissioners.
7. The developer must pave all roads, streets as well as provide sidewalks along at least one side of the road or street in the development.
8. The developer must provide street lighting in accordance with modern standards and building codes as approved by the Planning Board.
9. The developer must provide functional (water supply) fire hydrants at distances approved by the rural fire department (or city) in line with Insurance Co. standards, and approved by the planning board.
10. Drainage control, such as driveways, streets, runoffs, drainage systems must be provided by the developer and must meet the standards of the local gov't surveyor, Flood control office, the Planning Board, and the governing body.

664 South Sixth East  
Missoula Mt 59801  
July 13, 1984

Dear Member Missoula Planning Board,

Re: "Energy Efficient Subdivision Regulations"

The general program is not too well thought out.

Particularly bad is "Standards", page 13.

My recommendation is to eliminate all reference to roadways, streets and cul-de-sacs since the recommendations indicate a return to the standards of the 1920s and earlier.

That is, no consideration is given traffic: fire engines, garbage haulers, movers' trucks, buses--school and other--, parking at times of parties. No mention is made about children using tricycles, toy wagons, playing ball, hockey, or other children's activities on narrow streets. No mention is made of sidewalks to reduce roadway pedestrian use. No mention is made of utility easements; no mention of snow in borrow pits or roadsides and its impact on winter traffic.

Again, please delete from the document all references to roadways, streets, cul-de-sacs, accessways, etc. Current county road standards are superior.

Sincerely

*Lud*

Ludvig C. Browman

**RECEIVED**  
JUL 14 1984

MISSOULA PLANNING BOARD

# MISSOULA COUNTY

## MISSOULA COUNTY SURVEYOR

Missoula County Courthouse  
Missoula, Montana 59802  
Telephone (406) 721-5700

July 13, 1984  
S84-295

RECEIVED

Planning Board  
201 West Spruce  
Missoula, Montana 59802

MISSOULA PLANNING BOARD

Ladies and Gentlemen:

I have reviewed the document entitled "Energy Efficient Subdivision Regulations." It seems to be a very shallow, ill-defined document that I surmise was written to use grant money and keep the Planning Staff occupied between more important tasks. It recalls the big push a few years ago to save energy by using the renewable resource wood, only to discover that it created another monster, air pollution, that nobody bothered to consider in the single minded drive to save energy.

This document is written with the usual planning philosophy that passing a regulation will cause something to happen even if the regulation has no relation to reality. For example, this regulation deals extensively with how people will landscape their yards, no trees to the south and trees on the windy side. I fail to see how the developer, who usually sells undeveloped lots, can comply with this and the homeowner will certainly landscape exactly as he wants to regardless of the regulation. This type of regulation is just words that accomplish nothing but irate people.

These regulations enter the Planning Staff into some new areas that will increase development costs and delay processing. These are:

1. Shadow patterns must be submitted for urban subdivisions. This will create a whole new group of consultants to prepare these plans. Imagine what it would look like for a timber subdivision like Grantland.
2. Subdivisions will now be reviewed by the Energy Coordinator and Bicycle Coordinator, two more layers of bureaucracy.
3. Specific requirements, like maintenance of common areas, will now be required in the covenants thus opening them to regulation and control.
4. Landscape control, or at least where trees will be allowed, will now come under Planning Staff review.

Some of these regulations are apparently regulations just for the sake of regulating something. Some examples are:

1. The policy requirement that covers cutting and filling roadways is meaningless; any good engineer designs this way for economic reasons.
2. The standard for sodium vapor lights is not needed. I can't remember a subdivision with street lights but if one is developed the type of light should be engineered not dictated.
3. The street width for one-way loops is also unnecessary. Again, I can't remember a subdivision with one-way roads, but if one is developed the standard should be based on engineering considerations.

My specific comments on the "standards" are:

A. SOLAR ACCESS AND SEPTIC DRAINFIELDS - Drainfields are usually located downhill from the building or in the backyard where replacement fields won't tear up expensive landscaping. A blind standard that drainfields be south of the house is impractical and is an odd way to force vegetation control.

B. SOLAR ACCESS AND SHADOW PATTERNS - This will be very expensive and will require a preliminary structure design for every lot. Once it is done there is no way to insure it isn't ignored by the homebuilder.

C. ELECTRICAL SAVINGS IN STREET LIGHTS - As I commented before, this is unnecessary.

D. COST REDUCTION THROUGH REDUCED ROADWAY WIDTHS - This is a blind provision without relating it to right-of-way width, sidewalks, shoulders, curbs, turn-arounds and urban or rural areas. There is no such thing in the Missoula area as a residential street without parking. "No Parking" is another impractical planning regulation. You can't stop people or visitors from parking in front of a home, especially in the winter time. Narrow streets are nothing new in the Missoula area. The Wapikya subdivision is an example of narrow street and separate walkways. The walkways have been abandoned. The streets are so narrow we can't plow snow on them either to the side or to the center. When snow must be plowed it has to be loaded and hauled away at a tremendous expense in labor and fuel. Narrow streets are dangerous for drivers, bikers and pedestrians. This standard doesn't mention bike or pedestrian facilities but the preceding narrative indicated narrow streets function with separate pedestrian paths. Add the cost of building and maintaining separate year-around pedestrian facilities and there is a negative energy



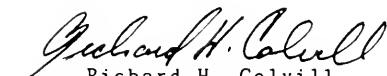
saving. While the narrow street standard is presented as an energy saving standard, I suspect it was included to reduce construction costs, which it does. The energy saving in the initial construction is minimal and the asphalt saved is a semi by-product in refining process. Narrower streets do not reduce maintenance costs. Sweeping is primarily done on the outer third of the street regardless of the width. Snow plowing cost and fuel consumption drastically increase for narrow streets getting the same service as wider streets. Rebuilding costs and material costs are seldom related to width as the chip seals and overlays are done only to the driving lanes. Taking of private land is reduced but this doesn't save energy. The street issue doesn't belong in an energy regulation but should be part of an overall change in the subdivision regulations where the entire standard can be reviewed along with fire protection needs and dust generation from un-paved shoulders.

E. MASS TRANSIT ENERGY SAVINGS - Since the transit district has a separate tax base that may well increase, this provision could easily promote subdivisions more than one-half mile beyond the transit district; thus encouraging commuting instead of transit riding. Separate bus pull-outs are difficult to build and maintain and are usually temporary.

F. ENERGY SAVING THROUGH THE USE OF BICYCLES - This seems opposite of the narrow street standard. Wider streets are the safest and most energy efficient way to have bicycle facilities. This standard should be in the policy considerations because it doesn't establish anything.

In summary, I recommend you set this poorly written regulation aside until the comprehensive plan, which is considering many of these aspects, is finalized. This is what planning is all about; develop an overall plan and set the standards and regulations to implement it. Developing the standards and policies before the plan is a bureaucratic exercise, not planning.

Sincerely,



Richard H. Colvill  
County Surveyor

RHC/dcm

# MISSOULA CITY-COUNTY HEALTH DEPARTMENT

301 West Alder • Missoula, Montana 59802 • Ph (406) 721-5700

## Comments on Proposed "Energy-Efficient Subdivision Regulations, Considerations and Standards

In general, the Missoula City-County Health Department strongly supports processes which lessen the use and impacts of energy consumed in Missoula County. In particular, the reduction of energy use can have significant impacts on air pollution generated from transportation and residential sources. It is important to address energy use in our long-range planning to insure that air quality steadily improves rather than worsens as the Missoula urban area continues to grow.

We would like to make the following specific recommendations regarding the proposed policies and standards:

(1) We propose that policy consideration "4. Site Design for Solar Access" be amended as follows:

"All subdivisions should be reviewed by the Planning Office in concert with the Energy Coordinator to insure energy-efficient site design and building location."

(New) The developer should identify preferred energy-efficient building sites on each parcel within a subdivision. The location of preferred energy-efficient building sites should, where practicable, maximize protected solar access for each lot, taking into consideration topography, the locations of roads, sewerage disposal or drainfield areas, native vegetation, water supplies, and local meteorology.

Special care should be taken by the developer to avoid placement of structures in cold air drainages, cold air sinks, and on portions of the subdivision which receive maximum shading on December 20. Covenants for the maintenance of open areas should be included to guarantee that these areas do not become areas of little use due to weeds, garbage, etc."

In conjunction with our proposed amendment to the "Site Design for Solar Access" policy, we request that the standard listed as "A. Solar Access and Septic Drainfields" be deleted entirely. We are making this request because we believe strongly that this requirement would, in many circumstances, force the developer to locate the drainfield in an area that is less than optimal for the purpose of sewerage disposal.

It should be noted that in reference to the language proposed by the Planning Board, a "drainfield" is not synonymous with an open area suitable for solar access. Drainfields are often installed among treed or in forested locations. Also, drainfields are often landscaped with both coniferous and deciduous trees because the drainfield supplies moisture and nutrients to plants which develop subsurface soil root systems.

(2) The first sentence of Policy "8. Heating and Cooling Losses and Prevailing Wind Direction" should be amended as follows:

"The topographic data required in Section II-A-6 of the Missoula County Subdivision Regulations and in Section II-A-6 of the City of Missoula Subdivision Regulations should include prevailing wind directions for wind speeds greater than 5 m.p.h. during the heating season."

This information will better represent prevailing wind directions for the entire heating season which will have significant impact on the heat loss of a home. We also believe the Planning Board should understand that site-specific meteorological data is expensive to collect, and that the purpose and intent of the information should be well understood before making it a requirement.

(3) We also recommend that a requirement be added to the end of the policy which would read as follows:

"11. Supply of Utility Energy." Where economically feasible, the developer should provide for access to electricity and natural gas on each lot."

The purpose of this amendment is to insure that consumers have access to the cheapest form of utility energy. The lack of available natural gas in a subdivision in Grant Creek has caused excessively high energy costs for consumers, and has forced many to use wood heat as an economy measure, which in turn degrades the air quality.



APPENDIX C

MINUTES OF VARIOUS  
PUBLIC MEETINGS



MISSOULA PLANNING BOARD

July 17, 1984

The meeting of the Missoula Planning Board was called to order by Chairman John Wicks at 7:30 p.m., in the City Hall Council Chambers. Roll call was taken and the following attendance was recorded:

MISSOULA PLANNING BOARD

John Wicks  
Jay Raser  
Germaine Conrad  
Philip O'Connell  
Dale Harris  
Gary Decker  
Richard Chapman

MEMBERS ABSENT

Gardner Cromwell  
Karen Ward  
Mike Copeland

STAFF

Kristina Ford  
Mark Hubbell  
Pat O'Herren  
Melanie Knadler

CHAIRMAN WICKS: Item three on the Agenda is the June 19, 1984, minutes of the Missoula Planning Board. Are there additions or corrections to those minutes?

RICHARD CHAPMAN: On page 14. One little talk I make, a little over half way down, it says, basically, "we voted against Resolution number one". Line ten. I lapsed into an editorial "we", which I don't usually do. It leaves the impression that I was speaking for that subcommittee, which was not the case, so I would like to have the minutes reflect that the intent of that "we" is, in fact, an "I". So it's, "I voted against", but the Committee did not. Thank you.

CHAIRMAN WICKS: Let the record so show, please. Are there further additions or corrections to those minutes?

There being none, the minutes were approved as corrected.

Item four on the Agenda is Communications. The first Item here is the act just taken by the City Regulatory Commission, concerning the Item on it's Agenda, the recommendation of approval of the Amended Plat of Tract 1, Bitterroot Homes addition no. 2. Is there a Motion on this?

GARY DECKER: I Move that we accept the City Regulatory Commission's recommendation and pass this on to the City Council.

SECONDED BY JAY RASER.

CHAIRMAN WICKS: Is there discussion? Are you ready for the question? The question is then, to accept the recommendation concerning the Tract 1, Bitterroot Homes addition no. 2, and recommend approval subject to the conditions stated to the governing body.

UPON A VOICE VOTE THE MOTION CARRIED UNANIMOUSLY.

Item 5b. involves a Public Hearing on the subject of the Review of proposed energy-efficient subdivision regulations. Is there a Staff Report on this matter?

PAT O'HERREN: What you have before you tonight, Mr. Chairman, is a Public Hearing on the Planning Staff's energy-efficient subdivision regulations, which were forwarded to you approximately a month ago. If you look through that Report, you will note that the Department of Natural Resources and Conservation gave us a grant to come up with several proposals that would help save energy in the subdivision field. ( See Staff Report ) (See Addendum following minutes).

We have had three letters that I handed out to you tonight, and that's the only written response that we have had to the proposals so far. ( See letters following ) We would ask you to take testimony tonight on the proposals.

If you have any questions, I would be happy to try and answer them for you. I would note that there is a representative from DNRC here tonight as well as Lois Jost our energy coordinator. So you can ask questions of both of those entities also, as well as the Public.

CHAIRMAN WICKS: Thank you Mr. O'Herren. We will now open the Public Hearing on the matter of the proposed energy-efficient subdivision regulations. In this Public Hearing, we ask that you come to the podium when called on, state your full name and spell your last name, so we can get it correctly in the minutes and then tell the Board whatever you think appropriate concerning the proposal. The Public Hearing is now open. Is there anyone who would like to address the Board on the matter?

LOIS JOST: I'm the City/County energy coordinator. Again, thank you for taking the time to review these subdivision regulations this evening. I would like to give you a little background on the project and tell you that this project is one of three areas that we're considering as far as energy-efficiency is concerned. The subdivision regulations in this present proposal is one. The second is a consideration of zoning changes that may be looked at in so far as energy-efficiency is considered, and that is being drafted at this point. The third is a look at our present building codes standards in the State, and how those compare with the Northwest Power Planning Council and the standards that they are proposing in the Northwest Power Plan, and how we might implement that in this State, how that might affect Missoula County. Our goal in looking at subdivision and zoning regulations and building design and building codes, is to try and optimize natural conditions and processes in designing and planning so that we can minimize mechanical and non-renewable energy resources in a building in it's inherent environment. These subdivision regulations are written to suit Missoula. We have had these regulations reviewed by the energy conservation Board, and the Board spent a good bit of time reviewing these regulations and trying to suit them to Missoula's needs, not to make them too strict, but to allow them to be fairly soft and are intended to reflect our goal to decrease our dependence on non-renewable energy resources in the County, and I think that they are an excellent starting point for energy considerations and subdivision planning. I have been reviewing a number of standards across the Country in varying States, and one State in particular, in Colorado, I noted that the subdivision and zoning regulations in many of those cities there, are quite strict by comparison to these standards that we're proposing here. Colorado, of course, as I was reading in Megatrends, is one of our five leading



States in the Country. The rest of the States are sort of follower States. I looked at their's and thought that perhaps may be some point way down the road for us, but, at this point these regulations seem very suited for our needs. I will stop at that point and allow other people to give Public testimony, and I again thank you for taking a look at these regulations. I'm available to answer any questions you might have for me as well.

CHAIRMAN WICKS: Thank you Ms. Jost. Is there anyone else who would like to address the Board?

ARLENE BRAUN: I'm a Staff member for the Montana Local Government Energy Committee. My comments tonight are simply to encourage you in what you are doing. You may all be aware that the Montana Local Government Energy Committee is interested in helping Cities and Counties or the local government agencies work with their energy problems. Part of the Northwest Power Plan that Lois Jost mentioned does deal with the land use planning and the protection of solar access is a very important aspect of the Northwest Power Plan. So, I would encourage you to work on these regulations. I have reviewed them, as Lois has done. I have looked at what they are doing in other States. Some of which does not seem very appropriate for Montana so, I have been waiting month by month to see these, and I am very pleased with them; I think they are a very reasonable first step toward actually doing what we all know needs to be done and putting that into our subdivision regulations. I particularly would say that the standards, dividing them into standards and policy considerations are a very fine idea, and I particularly would support the standards; a, b and c, that relate to savings of electrical energy, which is what the Northwest Power Plan is all about. I would certainly support all the policy considerations too. I suppose that my preference would be to move a couple of the policy considerations up into the standards, particularly the restrictive covenants that protect solar access. It's so cheap and so simple when you start, and so difficult afterwards. However, I think this is a very reasonable start, and I would urge your support of these regulations, adoption of these regulations. I would be happy to answer any questions and provide any information. Thank you.

CHAIRMAN WICKS: Thank you Ms. Braun. Who would like to address the Board next on the matter?

PAT KEATING: I'm from the Department of Natural Resources. We gave the grant to the Missoula Planning Office last fall. We think that the Planning Office has done a very good job in researching the subdivision Ordinance. They've collected Ordinances from around the Country on this, and they have really done a good job in researching and putting together, I think, an Ordinance that fits Missoula itself. Missoula is a lot different from a lot of the other Communities that they looked at, and they have really taken time to fit it to this particular Community and surrounding area. I think Pat O'Herren and Barbara Martens really worked hard on this and tried to solicit the Public's view on this, tried to get their comments through a number of different means; letters, hearings, meetings, and I think they really tried to get what comments they could out of people. I think the Conservation Board should be commended too, on the work they have put into the effort and developing this, and getting everybody's opinions and working them into the final Ordinance. We'll just leave it up to the Planning Board and the local governments to go on with the process. If there are any questions we can answer, we will be glad to, on the Department's part. Thank you.

CHAIRMAN WICKS: Thank you Mr. Keating. Is there anyone else who would like to address the Board? Very well, the Public Hearing is now closed. Is there a Motion

from any member of the Planning Board on the matter, for purposes of discussion?

GARY DECKER: This is a question to you about my participation, in that, at the time that these were developed, I was involved in helping to develop them in some way under a job that I had at that time. I'm no longer in that job, but, I was just wondering if it is appropriate for me to enter in the discussion and vote on something like this or not?

CHAIRMAN WICKS: Since this is a matter of Public policy which doesn't have to do with any private interest that you might have, the Chair's ruling, subject to appeal, would be that you certainly do have the prerogative of participation in the discussion, Mr. Decker.

GARY DECKER: I Move that we adopt these energy-efficient subdivision regulations.

CHAIRMAN WICKS: It has been Moved that the Planning Board recommend adoption of the energy-efficient subdivision regulations. Is that your Motion? Is there a second?

SECONDED BY GERMAINE CONRAD.

The Motion before the Board, then, is the Board recommends to the governing body, the adoption of the proposed energy-efficient subdivision regulations. Is there discussion on the Motion?

DALE HARRIS: I have questions for the Staff. Has legal council reviewed these regulations, number one, and number two - Have you looked at the concurrent impact, the addendum to these regulations as they merge into the overall subdivision regulations? Has legal Council especially looked at the effect of that merger?

PAT O'HERREN: I'm not sure of your second question. What impact do you foresee these having on existing regulations, is that your question? From the Staff perspective, these would have no impact on regs, other than to supplement them.

DALE HARRIS: So, are they, in effect, merged, or are they treated as an addendum?

PAT O'HERRON: They would be an addendum to the existing regulations.

DALE HARRIS: I have another question. I noticed your list of people, organizations who recieved these regulations. Have you, in particular, recieved any comments from contractors, builders, that sort of group of people, in response to these regulations?

PAT O'HERREN: We had one inquiry from a rather large land holder from the South-hills who picked up a copy of the regulations, express some concern that the subdivision regulations were being changed at all, but I have not heard back from him after he picked up a copy of those.

DALE HARRIS: I'm concerned about the apparent piecemeal approach of adding...I'll go right to Colvill's letter, he stated, and I'm not sure I agree with it, but I at least want to ask a question, that he was concerned about the piecemeal approach of taking something as limited in perspective as energy-efficient regulations and merging them to the overall regulations. What I want to hear from you, is that you feel comfortable that there are not any punitive impacts.

PAT O'HERREN: I guess the best way to answer Dick's letter, is to say that when we looked at these, we looked at them from a Comprehensive standpoint. In other words, we had a Staff member who is extremely familiar with existing regulations and myself, who was working primarily on these. We worked together very closely to make sure that there were no negative impacts on the existing regulations, at least from a Comprehensive Planning perspective. That doesn't mean that some people won't object to portions of them. We anticipate that, as we do with any regulations.

DALE HARRIS: I guess my last question would be, my major concern here would be the concern that Nick Kaufman brought out in his letter from the Energy Conservation Board, that being the apparent lack of interest from interested Publics, and I hope that we have covered ourselves, by making sure that affected parties have, in fact, received these, and been given the opportunity to participate and have their voice heard.

PAT O'HERREN: The best thing I can tell you as far as Public notice goes, is that we did send out over 200 letters to interested parties. The Energy Conservation Board held two Public Hearings. We have had interviews on two local radio stations, one a half hour in length, the other about ten minutes in length. There was a lengthy article in the Missoulian that made the front page of the Community section, and we have had at least two television interviews that I know of. We hope, of course, that the Public is aware of what is going on. There will also be Public Hearings before the City Council, and the County Commissioners.

CHAIRMAN WICKS: Is there further discussion?

GERMAINE CONRAD: I have a couple questions for Ms. Jost. First, I would also like to categorically state that I disapprove of Mr. Colvill's unprofessional jibes at the Planning Department. I think it is unnecessary and unprofessional. But, he has a few questions, I think this is as much for the minutes as anything, that I would like to have answered. One of them being the use of bicycles on narrow streets. I have my own opinions, I would like to hear how you would answer his complaint.

LOIS JOST: I have spoken at length to the bike coordinator about how bike routes and paths should be put into a City and planned. I do believe that is a concern. What the bike coordinator told me was that if a street is narrow and a busy street, that combination is not good for adding a bike path to it, or have that be a route for the bicycle route or street for the bicycle route. You would take a much less trafficked street, perhaps a wider street, or make a separate bike path and put that into the bike route for that subdivision.

GERMAINE CONRAD: The other one is, Mr. Browman's complaint, or his accusation or criticism, that the recommendations return to a standard of the twenties and earlier, how would you respond to that? I'm concerned about the use of the references to the roadways and such.

PAT O'HERREN: I guess I could probably best respond to that since I work with subdivisions a little bit more than Lois does. We've only suggested two alterations to existing street design standards, that's with cul-de-sacs and one way loop streets. If you will refer back to Mr. Colvill's letter, you will note that he can't remember even having one way loop streets. There are instances where we have had them, they are primarily in Mobile home parks and recreational vehicle parks.

GERMAINE CONRAD: I'm sorry, I didn't hear what you said. Will we have one way streets?

PAT O'HERREN: We have had one way loop streets in mobile home parks and RV Parks. There is one proposal for a development up the Rattlesnake that preliminarily had a one way loop street in it. So, what we are suggesting are changes to roadway widths that are not commonly found throughout the Communities. I don't think that we are going back and revising standards so we fall back to what Mr. Browman refers to as the standards of the twenty's. We have suggested very minor modifications to existing roadway widths.

GERMAINE CONRAD: To whoever is more knowledgable on this one, if a person should come in for a subdivision, say a small one, and the drainfield is impractical because of the slope of the land, I'm going to assume that people are going to come in for a variance.

PAT O'HERREN: Right, the standard that you are talking about is on page 13, and it's standard a., which reads, "whenever possible drainfields shall be located to the south of the structures in order to promote solar access to the structure". The key words there are "whenever possible", so if it were south facing, but uphill, it would not be possible to put the drainfield there, so we would not expect them to propose such a location.

CHAIRMAN WICKS: Is there further discussion?

RICHARD CHAPMAN: Pat, the word, "regulations" seems a little strong. If these are integrated into the existing regulations, are enforcement mechanisms present in the existing regulations, that put teeth into these, or are these policy considerations and standards, in effect, on the order of recommendations and guidelines, but not really enforceable regulations?

PAT O'HERREN: The distinction, I guess, that I at least have to try to make clear when folks come into the Office, is that there are policy considerations and there are standards. If this is adopted as it stands before you tonight, then what will happen to the subdivision regulations, is we have packets that we give people to explain the process to them. Within that packet, they will get the policy considerations. In other words, these are very good ideas that you might want to consider when you subdivide your land. Please look at them, they may save you money in the long run. On the other hand, within the packet will be standards that already exist and that would be the green copy of subdivision regulations, to which will be added the standards that start on page 13. So, there are two distinct types of items to consider here; policy considerations, which are, in fact, recommendations, and standards, which are items which must be met by each subdivision, pending, of course, variances and unusual cases. What we did not want to do is propose a list of standards which would have included the ten policy considerations, which would then have to be granted variances, almost routinely, such as developments should generally face south or provide a south exposure. That's not always possible in Missoula County, so, in order to prevent the granting of a number of variances, which tells you that the regulations are really not applicable, we just made those suggestions. However, the standards should be able to be met by most all subdivisions.

CHAIRMAN WICKS: Is there further discussion? Are you ready for the question? The Motion before the Board is to recommend adoption of the proposed energy-efficient

subdivision regulations. Those in favor of the Motion will please say aye, those opposed no.

UPON A VOICE VOTE THE MOTION CARRIED.

Item six on the Agenda is Old Business. Item 6a. is a report from the Steering Committee on Comprehensive Plan Revision. For what might be called a Staff Report, may we call on either Nick Kaufman or Dick Gotshalk.

NICK KAUFMAN: I'm the Chairman of the Steering Committee for the Comprehensive Plan. Dick worked on the drafting Committee for the Green issue statement you have in front of you. Basically, that issue statement is an accumulation of approximately a year and a half's worth of work of the individual task forces for the Comprehensive Plan. The task forces, as well as the Steering Committee have reviewed that issues document and it will come before this Board and the Public sometime in early September is our goal for the Public Hearing. The purpose of that hearing, or that workshop will be to encourage and solicit comments from those members of the general public who for reasons of budget and personal time constraints or whatever, could not attend or participate in individual task forces, or the Steering Committee. Following that, the task forces will reconvene, develop goals, objectives and policy statements and we anticipate that sometime in the spring we will have an adopted Comprehensive Plan for Missoula County. Dick, would you like to add anything to that?

CHAIRMAN WICKS: Are there any questions from members of the Board?

NICK KAUFMAN: It's important for the Board to note that what you have in front of you represents an awfully lot of hard work by the Missoula Planning Staff, as well as the members of the individual task forces. It was not a Steering Committee job or specifically a Staff job, but I think, an awful lot of combined effort on the part of both groups, and an awful lot of people.

GERMAINE CONRAD: Since each and everyone of the Planning Board members was invited to join the Steering Committee, and to join each of the different Committees, we're sitting here with complete and strong feelings of guilt, Nick. That's why we don't say much.

GARY DECKER: When did you say that you thought the workshops would be?

NICK KAUFMAN: We anticipate the workshop to be in September. We hope early September, but that is a function of how well the responses come in from the individual task forces, and then those will be assimilated. We anticipate that the document you see before you is not going to have changes made to it until after that workshop. We don't want to take that document and insert the energy task force comments here, and the economy task force comments here, but rather to get all the comments and then those the Steering Committee feels are appropriate will be entered into that document, and then we'll move to the next phase, which is goals and agendas.

GARY DECKER: Do you feel that this is the major part of the work in getting the issues put together?

DICK GOTSHALK: In getting the issues put together, yes. But, I don't know how many could play on Germaine's guilt thing. I don't know how many have actually read what you have got in front of you, and I'm not sure whether it said in there,

PAZ COMMITTEE REPORT

AUGUST 8, 1984

MEMBERS PRESENT

LARRY MCLAUGHLIN, Chair  
JANATHAN WAGNER  
AL SAMPSON  
LOUIS HERBIG  
MARCI BRIGGS  
FRED RICE

OTHERS PRESENT

DONNA SHAFFER  
FRANCIS SUPERNEAU

OTHERS PRESENT

KRISTINA FORD  
JOHN VERBURG  
BARBARA MARTENS  
JIM RUGENT  
DICK AINSWORTH  
ABE ABRAMSON

\*1. AMEND "C-11" ORDINANCE TO PERMIT MINI-WAREHOUSING.

THE COMMITTEE RECOMMENDS THAT THE COUNCIL REFER THE INCLUSION OF MINIWAREHOUSING AS A CONDITIONAL USE IN COMMERCIAL ZONES TO THE PLANNING BOARD FOR PUBLIC HEARING.

Doug Flanagan requested that the Council consider adding miniwarehousing as a conditional use to the "C-11" commercial zone. During the discussion, the Committee decided that miniwarehousing may well be an appropriate use in some "C-11" commercial zones and some "C" and "C-1" commercial zones as well. Therefore, the Planning Board should hold a public on the desirability of including miniwarehousing as a conditional use in these commercial zones and make recommendation to the Council as required by State Law.

\*2. WILLOW RIDGE TOWNHOUSES FINAL PLAT.

THE COMMITTEE RECOMMENDS THAT THE COUNCIL APPROVE THE WILLOW RIDGE FINAL PLAT.

3. ENERGY EFFICIENT SUBDIVISION REGULATIONS.

Held in committee until next week.

4. APPOINTMENTS TO THE BUILDING CODE BOARD OF APPEALS.

Kristina Ford informed the Committee that two of the members of the building Code Board of Appeals are the architects who serve on the Design Review Board. Due to an appointment conflict one of the members inadvertently served 13 months rather than the 12 months specified. This discrepancy will be corrected however when the new appointments are made to the Design Review Board later this month.

PAC COMMITTEE REPORT

August 16, 1984

MEMBERS PRESENT

LARRY McLAUGHLIN, Chair  
JAMATHAN ROBER  
AL SIMPSON  
LOIS HERBIG

MEMBERS ABSENT

FRED KILE  
MARCI BRIGGS

OTHERS PRESENT

KRISTINA FORD  
JOHN VERBURG  
BARBARA MARTENS  
NICK KAUFMAN  
ELAINE EILU  
ABE ABRAMSON

\*1. DURLINGTON NORTHERN FINAL PLAT.

AFTER REVIEWING ALL TESTIMONY AND DOCUMENTATION THE COMMITTEE RECOMMENDS THAT THE COUNCIL APPROVE THE DURLINGTON NORTHERN RESERVE STREET INDUSTRIAL CENTER - FINAL PLAT BECAUSE THEY HAVE MET THE CONDITIONS OF PRELIMINARY APPROVAL.

The preliminary plat was approved with 15 conditions as detailed in the attached staff report. Condition number 7, which was not resolved until last week, will be met by moving the tank away from the new property line, rather than adjusting the property line.

\*2. CRESTVIEW FINAL PLAT FILING EXTENSION.

AFTER REVIEWING ALL TESTIMONY AND DOCUMENTATION THE COMMITTEE RECOMMENDS THAT THE COUNCIL APPROVE A 45 DAY EXTENSION TO THE FILING DEADLINE OF CRESTVIEW HEIGHTS FINAL PLAT AS REQUESTED BY THE DEVELOPER.

\*3. ANNEXATION PETITION # 0797 (2223 SOUTH ORD ST. WEST)

AFTER REVIEWING THE STAFF REPORTS, THE COMMITTEE RECOMMENDS THAT THE COUNCIL ADOPT THE ATTACHED RESOLUTION OF INTENTION TO ANNEX THE PARCEL DESCRIBED THEREIN, AND TO SET A PUBLIC HEARING ON THE MATTER AT THE EARLIEST CONVENIENT DATE.

4. ENERGY EFFICIENT SUBDIVISION REGULATIONS.

This item was held in Committee until September 19, 1984. The staff was directed to invite several developers and Lois Jost, City/County Energy Coordinator, to the Committee meeting to discuss the implications of the standards, particularly the shadow pattern requirement. Lois Jost should be prepared to show the Committee how to draw a shadow pattern as recommended by the proposed regulations.

Submitted by:  
John Verburg

# PAZ COMMITTEE REPORT

SEPTEMBER 26, 1984

## MEMBERS PRESENT

JANATHAN WAGNER, Chair  
FRED RICE  
AL SAMPSON  
JANATHAN WAGNER

## MEMBERS ABSENT

LARRY MCLAUGHLIN  
LOIS HERBIG

## OTHERS PRESENT

DONNA SHAFFER  
MARILYN CREGG  
KRISTINA FORD  
JOHN VERBURG  
JIM NUGENT  
BARBARA MARTENS  
JOE ALDEGARIE  
LOIS JOST

### \*1. ENERGY EFFICIENT SUBDIVISION REGULATIONS.

THE COMMITTEE RECOMMENDS THAT THE COUNCIL ADOPT THE ATTACHED ENERGY CONSERVATION PROPOSALS AS ENERGY SAVING SUGGESTIONS. THEY WILL NOT HAVE THE FORCE OF LAW AND WILL BE INCLUDED WITH THE SUBDIVISION REGULATIONS AS SUGGESTIONS ONLY.

Lois Jost, Energy Coordinator, showed the Committee how to perform a shadow pattern analysis and provided a couple of drawings which aid in that endeavor. She stated that while it is simpler to perform the analysis for single structures, the solar gain potential of entire subdivisions can be mapped.

### \*2. ANNEXATION OF OVER 25 ACRES DIRECTLY WEST OF GRANT CREEK CENTER.

AFTER REVIEWING THE STAFF REPORTS, THE COMMITTEE RECOMMENDS THAT THE COUNCIL ADOPT THE ATTACHED RESOLUTION OF INTENTION TO ANNEX THE PARCEL DESCRIBED THEREIN, AND TO SET A PUBLIC HEARING ON THE MATTER AT THE EARLIEST CONVENIENT DATE.

### 3. COUNCIL RETENTION OF AUTHORITY TO SET LIMITS ON VARIANCES.

Continued until the next regular meeting of the Committee.

### 4. STAFF REVIEW OF SOLAR ACCESS RIGHTS AND OBLIGATIONS.

The Committee directed the staff to determine what options are available to protect solar access. The staff may wish to consider requesting that Lois Jost, Energy Coordinator, perform the literature review and report back to the Committee.

submitted by:  
John Verburg



JOURNAL OF PROCEEDINGS  
MISSOULA CITY COUNCIL  
AUGUST 6, 1984

CALL TO ORDER AND ROLL CALL

The regular meeting of the Missoula City Council was called to order by Mayor John Toole at 7:30 p.m. in the Council Chambers, 201 West Spruce Street. Present were Alderwomen Herbig, Ransavage, Shaffer and Wagner and Aldermen Hubbard, McLaughlin, Potts, Rice, Sampson and Superneau. Alderwomen Briggs and Hopkins were absent. Also present were City Attorney Nugent, City Clerk Young and Deputy City Clerk Abels.

APPROVAL OF MINUTES

The minutes of the regular meeting of July 23, 1984 were approved as submitted.

Alderwoman Shaffer said, I was thinking that we should certainly commend Karen and her staff for 39 pages of minutes with no errors.

ITEMS TO BE REFERRED

Request by Jim Van Fossen regarding Parks Department quarterly report.

This was referred to the Conservation Committee.

Request by Bruce Bender regarding sidewalk construction postponement for Reserve Street Development Co. at 3100 N. Reserve.

This was referred to the Public Works Committee.

Request by Bruce Bender regarding sidewalk construction postponement for Beach Transportation at 820 Burlington Ave.

This was referred to the Public Works Committee.

Request by Mike Young regarding health insurance audit contract.

This was referred to the Finance and License Committee.

Request by Mayor Toole regarding confirmation of Assistant Chief Doug Chase.

This was referred to the Public Safety Committee.

Request by John Verburg regarding amending "C-II" ordinance to permit mini-warehousing as a conditional use.

This was referred to the Plat, Annexation and Zoning Committee.

Request by John Verburg to initiate legal action against barter gas & salvage.

This was referred to the Plat, Annexation and Zoning Committee.

Request by Jon Nelson regarding health insurance claims administration contract.

This was referred to the Finance and License Committee.

Petition #6498 - Request by property owners to create an SID for paving and drainage improvements to Norman's Lane and West Artemos Drive.

This was referred to the Public Works Committee.

3  
Request by Jeanne Ransavage regarding letter from property owners on problems at 1121 Howell St.

This was referred to the Public Safety Committee.

Request by Kristina Ford regarding starting and ending dates for appointments to Design Review Board and Building Code Board of Appeals.

This was referred to the Plat, Annexation and Zoning Committee.

Petition #6499 - Request by Hammond Building, Inc. to rezone Lots 1-4, Block 4, Original Townsite (109 West Front St.) from "C" Commercial to "CLB".

This was referred to the Zoning Commission.

Request by Joe Aldegarie regarding request for traffic diverters in the McLeod Addition.

This was referred to the Public Works Committee.

Request by Joe Aldegarie regarding review of site plan for Block 11, Union Addition.

This was referred to the Public Works Committee.

Request by Joe Aldegarie regarding acceptance of deed to easement in Prospect Addition.

This was referred to the Public Works Committee.

Request by Dave Wilcox regarding amendments to interlocal agreement for Library services.

This was referred to the Judicial Review Committee.

Petition #6500 - Request by Christian Life Center to rezone Lots 13-20, Block 15, South Missoula Addition (337 Stephens Ave.) from "R-II" to "R-IV".

This was referred to the Zoning Commission.

#### COMMUNICATIONS FROM MAYOR

Mayor Toole said, I want to inform the Council that we have filed for the water right on the Rattlesnake Creek for sufficient water to run a hydroelectric plant using the water in the two 30-inch pipes that come from the dam down at the reservoir. We've been advised by several legal counsel to do this. This is not a big deal. The price we get from Montana Power for this electricity is not a large amount, nevertheless, if the price should increase, it could be substantial and to protect the City's interest we thought that would be wise. We may also have additional filings on the Rattlesnake if it appears necessary as time goes on. I do want to take just a moment to talk about the 55% rate increase of Western Water. This is, I think, a harbinger of the kind of trouble we're gradually getting into by reason of absentee ownership of our water system; basically, two men in Nevada and California. There is very little we can do for the people served by Western Water without the cash flow that would be provided by the Mountain Water Company. Our most vital resource is slipping from our hands; decisions are being made which should be ours to make. They are in virtually every city in the United States except this one. We see these people, the victims of the management of Western Water, and it's very frustrating not to be able to do something about it. The owner of Western Water has expressed, in no uncertain terms, his contempt for this community last January. You remember his words here and yet he's providing 600 or 700 families with the most basic resource that we have. It's enough to drive you up the wall;

at least it does me. These decisions are made without taking us into consideration. When Mountain Water purchased the Montana Power system, we weren't given the time of day and yet people say that we shouldn't condemn these people and use eminent domain. How did they treat us? We're using a perfectly legitimate tool that's used frequently. How did they treat us when they switched ownership between Montana Power and Mountain Water? They didn't give us the time of day, they wouldn't even talk to us. Yet, it's our water; it's our community and it's also our fault because we have not taken strong decisive measures for the last 50 years to get our hands on this water and reclaim it for ourselves and look now how the situation is beginning to deteriorate - Mountain Water coming in in a few months with a 20% increase, pumping vast quantities, probably in excess of \$20 million, out of the aquifer right under our feet, leaving the Rattlesnake idle. They're beginning to turn themselves into a profitable company now. When will Mountain Water sell out and who will buy Mountain Water? Then what kind of a situation are we going to face? This commands the action of the people of this community and I don't want to get too oratorical about this because I feel strongly about it. I hope that anyone who is listening, and I guess nobody is listening tonight because the radio is not on, so I'm wasting my words. I'll give the same speech again next week. I hope that the people will take the time and trouble to learn about this situation and realize how vulnerable they're becoming day by day, week by week, month by month.

#### CONSERVATION COMMITTEE - Alderman Rice

Alderman Rice said, number 1 is removal of one street tree on Jackson Street between Broadway and Front. The Conservation Committee recommends the City Council allow the removal of a Chinese Elm tree on Jackson Street between Broadway and Front, provided that the cost associated with the removal be the responsibility of the developer and I would so move. This is in order to make way for a Pizza Hut which will be constructed on the site of the now defunct All American Burger Bar. It's one of the few places in town that you can get real ice tea. I never looked at the sign, I just bought the tea. I'm not sure whether this tree has been removed already. The foundation for the new facility is in. There are some evergreens that will be left intact and there will be various kinds of landscaping that will go into that area which will make it more attractive. This particular tree will be in a driveway that will access onto Jackson Street so they won't have to jump out onto Broadway as well.

#### MOTION - removal of one tree on Jackson Street

Alderman Rice moved to remove a Chinese Elm on Jackson Street between Broadway and Front, provided that the cost associated with the removal be the responsibility of the developers.

#### Upon a voice vote the motion carried.

Alderman Rice said, number 2 is tree removal ordinance amendments. There were no additions that were recommended by the Committee so the ordinance, as proposed, is here to be adopted and I would so move.

#### ORDINANCE NUMBER 2396

An Ordinance amending Sections 12.32.010, 12.32.020 and 12.32.050, Missoula Municipal Code pertaining to planting, removal and destruction of trees or shrubs in public places.

#### MOTION

Alderman Rice moved the adoption of Ordinance Number 2396.

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Upon roll call the vote was as follows:

AYES: Herbig, Hubbard, McLaughlin, Potts, Ransavage,  
Rice, Sampson, Shaffer, Superneau and Wagner  
ABSENT: Briggs and Hopkins

Motion carried: 10 Ayes and 2 Absent.

FINANCE AND LICENSE COMMITTEE - Alderman Hubbard

Alderman Hubbard said, number 1 is draft proposed ballot issue for acquisition for water system. The Committee discussed whether or not to refer the City of Missoula's intended acquisition of the water system serving Missoula to the voters on a City election ballot as a City advisory ballot issue. The Committee members favoring placing the issue on the ballot expressed the opinion that the matter was so important, the City should not pursue without having the views of the voters and that a positive vote from constituents would take the steam out of the freeholders. Those Committee members speaking against referring the issue to an election expressed the opinion that the City ought to proceed with acquisition of the system, inasmuch as elements in the community wishing to block the purchase will pursue their initiative drive regardless of whether or not the City places its resolution on the ballot. Al Sampson commented that inasmuch as Park Water charges Missoula customers about \$300,000 per year in administrative costs, each day of delay in buying the system costs Missoulians an additional \$1,000. Finance Officer comment: In addition, under current PSC-approved rates, Park Water charges \$2,488 per day as a return on investment to its owner and \$1,883 per day in Federal and State taxes for a total of over \$5,000 per day. Lois Herbig made a motion that the City reject the proposed resolution to place the issue on the ballot for voter approval as an advisory ballot. The vote was tied 4 votes yes and 4 votes no. Committee members voted as follows: Those in favor of rejecting the resolution: Marci Briggs, Al Sampson, Jeanne Ransavage, Lois Herbig. Those against rejecting the resolution: Jan Wagner, Larry McLaughlin, Francis Superneau, Tim Hubbard. Since only one motion was made in Committee, I will go ahead and remake that motion and that's that the City reject the proposed resolution to place the issue on the ballot for voter approval as an advisory ballot.

A RESOLUTION OF THE MISSOULA CITY COUNCIL PACING THE CITY OF MISSOULA'S INTENDED ACQUISITION OF THE WATER SYSTEM SERVING THE MISSOULA COMMUNITY WHICH IS OPERATED BY MOUNTAIN WATER COMPANY WHICH IS OWNED BY PARK WATER COMPANY, A CALIFORNIA CORPORATION, ON A CITY ELECTION BALLOT AS A CITY ADVISORY BALLOT ISSUE.

MOTION

Alderman Hubbard moved to reject the Resolution as described above.

Alderman Rice said, I apologize for having to leave that meeting at 4:30 and thereby, perhaps, causing the quandary that we're in tonight. In thinking about this particular issue over the last couple of weeks since it first developed, it seems to me that, basically, three positions have emerged. The first position I choose to describe not entirely accurately is that of being opposed to acquisition and I've lumped it with the notion of those who may be opposed to the use of eminent domain as a vehicle for acquisition and they are quite different, and I do not want to demean the people who have adopted this position for their philosophical difficulty with the use of eminent domain. I'm not entirely happy with it myself. Secondly, there is the argument from prudence and I have indicated in Committee and also on the floor that I am fairly sympathetic with this argument as well. That, in fact, the prudent course under the circumstances is, or may be, to put this particular issue on the ballot and thereby save ourselves the pain and the delays which may result

if some kinds of litigation or legal maneuvering is the course that the opponents to purchasing the water system choose in the future. The final position, which is more or less the position that I've come to as a result of a number of different factors and the one which will influence the way I vote, can basically be summarized in the following way. Basically, this is what we're here for. We're here to make these kinds of decisions and it is a abrogation, both of our responsibility, on the one hand, and of the trust that has been placed on us by those who elected us to say we're either unable or unwilling to make the kinds of decisions that are involved in deciding to use eminent domain in this case, or acquiring the water system generally. I think, and I've said this several times both in Committee and on the floor, that what we are here to do is to take matters such as this under advisement and to make the best decisions that we can. In the event that we fail to make the decision that either pleases or is satisfactory to the people who put us here, then I would hope that they would do what they felt was necessary to see that either our minds were changed or that we were no longer in a position to make those kinds of decisions. For that reason, I'm going to vote in favor of this particular motion.

Alderwoman Herbig said, I have several reasons for wanting to go along with this motion that I made in Committee. Foremost is the confusion that I think the voters will be faced with at voting time in November; the confusion over too many initiatives and resolutions. For instance, the freeholders' so-called binding one in regard to this water issue; our City advisory one which would be this one, if it makes the vote tonight. There's a denture initiative, there's a milk price decontrol initiative, there's a constitutional referendum for judicial discipline, one on congressional redistribution and balance of the Federal budget and I can just hear the voters' dismay when they have to go through all that and then, incidentally, vote for President of the United States. There has been a grumbling about so many things to have to vote on that it almost seems to me that you have to take a class in understanding what the different issues are that you're voting on and it seems to me the simpler, the better; the fewer initiatives and referendums would solve some of that confusion. Secondly, and almost as equally important, is that the Rattlesnake is an integral water source. I guess I bring that up because should people become confused and not be educated well enough, which would be quite difficult to do, to educate them as to the water purchase thing, certainly we on Council have attended umpteen and hours of education to try to understand the conclusions that were brought about after this study five years ago and then recently, but if people become too confused and don't understand what's at stake, we lose the Rattlesnake and development and septic tanks would become the norm in that area. We're not depending on 36 wells for our source and should there be an outage in electricity, we'd have a problem in that we'd be without water; lowering, also, the water table in some areas and the vulnerability of contamination would be another problem. Surface water could also be contaminated at the same time. I think there ought to be more testing of the water which is being done but not as often as a lot of residents that I've talked to feel it should be done. Forty-five percent of our water is provided by Rattlesnake Creek which all of us know. The pressure is definitely lower. I think that people realize that with depending on just the 36 wells. We've noticed some inefficiency in, for instance, our lavatory. We can't flush the thing when we're watering at the same time. That has never happened until this past summer. Leaking pipes is another big problem and it hasn't been faced or taken care of. There's a high per capita usage as a result and I also think that there's an unfair charge for water for people that are on the flat rate. We went on meter and because we don't have any leaks we rarely pay more than the \$5.92 per month and I have the billings for the last year or so, so I think that it's something that would be corrected as a result of a water pipe replacement program through the City and also placement of meters

on a graduated scale. I would hope that the Mayor, if this goes to a tie vote, would forget about the consistency issue and I was going to say not be pig-headed, but I won't say that - I'll use the word inflexible instead - and I think there's a fine line between the two and with new information I think everyone should be ready to do a little turn around. One final issue is the taxes the Missoula citizens are paying through the nose for fire hydrants, \$100,000 a year; sewer is paying \$10,000 for water and I think I'll stop at that.

Alderwoman Ransavage said, it is in the best interest of the Missoula community to purchase the water system that serves this community, for the reason it is an important natural resource to those who live in this community and also City government will be able to operate the water system less expensively since the City would not be attempting to receive a guaranteed profit percentage and the City local government will not have to pay income and property taxes (Federal and State). The City can borrow money with cheaper interest and also the money will stay in the state of Montana. My first concern is about the cost to educate the public. The second is the cost of election and the third is the distortion issue by those who oppose to purchase of the water system. The City of Missoula pays now over \$100,000 for fire hydrants. It will be much less if the City owns the water system. This is an administrative matter that the City Council, as the City elected representatives, are more informed about, as we will never be able to inform the public prior to the election. There is no requirement in the State law that this matter should be put on the ballot. The revenue bonds are retired by the water system charge assessed against the water use. I have been on the Council, I think, longer than all of you and since before; it's almost 20 years that we've been talking about buying the water system and everytime, for one reason or another, we let it go. The more we wait the more expensive it will be and I think we should go on.

Alderwoman Wagner said, I guess I am mortified by the lack of fiscal responsibility shown among some of my counterparts on this Council. I have a great deal of difficulty trying to figure out how we are supposed to go ahead with the purchase of the water system when we don't know how much it's going to cost us. We've been talking about lawsuits now that have been purported by different factions within the City of Missoula. The time estimate coming from Jim Nugent has gone from anywhere from one to three years. Especially in the interest world a great deal can happen in the period of three years so we're dealing with number one, the cost which is going to be affected by the time caused by the legal maneuvering among different factions within the City of Missoula. We don't know what interest rates will be. We don't know how much our legal costs are going to be in that period of time and on top of that, we are going into condemnation which is going to increase the cost even further so right now we are looking at an acquisition that we have no idea how much it's going to cost. Number two, there appears to me to be a great division in this community about whether we should or should not acquire the water system. As I talk to people in my ward, the general consensus is, "No, we do not need and we do not want to purchase the water system". It seems to me that if a community is this divided as it appears to be, that we have a right and an obligation to put this particular matter on the ballot. As far as the education and the cost of education, I think that that particular argument is generated by fear that the citizens won't come to the same conclusion as the majority of the members of this Council have come to. The cost of an election is roughly \$6,000 which appears to me to be substantially less than the amount of legal maneuvering it's going to cost us in the next three years. Al Sampson, in the report, keeps referring to costs paid by consumers that are going to California and we've gotten a breakdown on a day-by-day cost but let's take another example. Let's say that someone in Houston is buying American Dental profits and they have decided, "We don't want the profits going out of Houston coming back

to Missoula, Montana." That kind of reasoning doesn't make any sense at all. I think it's the duty of this Council to put this matter on the ballot and I think we should put it on the ballot and have it resolved once and for all.

Mayor Toole said, I'd like to intervene here. I think it's a tremendous coincidence that I heard the speech that Jan just made from an attorney in town who couldn't have been the same attorney, I assume. It's just a coincidence. The very same examples were used, Houston and so on, and I can't imagine who that attorney could have been. We talked at some length about this.

Alderman McLaughlin said, the one thing we seem to be dealing with here is a small group of people, the freeholders, from Missoula County and I feel putting this issue on the ballot is the only way that we're ever going to quell the outcry of these freeholders that we're not voting in the interests of the residents of this city. People of this city are not ignorant and I feel would make a favorable and intelligent decision in this matter. If this action goes the course, the time involved and the cost involved will be significant. We are here to represent the taxpayers of this city and the tax dollars that they spend here. I feel that putting it to the ballot is the most expedient, cost-effective manner in which to handle this acquisition. On that basis, I will vote against the motion.

Alderman Rice said, I have a couple of responses, none to yours, John. I think that sort of speaks to itself but to talk about some of the points that Larry just mentioned. It seems to me that it's fairly unlikely that the people of this city would vote against the acquisition of the water system. What is true is that a very small number of people have opposed, and consistently opposed, efforts of this sort. I am not afraid to stand up to the people who elected me and say I supported this. I'm also not afraid, in say, March of next year, if we are tied up in litigation of one sort or another, to come back here and say, "As an offer to the people who are putting us in the courts, will you be bound by an election?" and that is an option, but I really think that we're talking about a very small number of people. I think that it really is a tremendous red herring to constantly worry about everything we do being tied up in litigation. Obviously, anything we do can be tied up in litigation and one or two things have been. The point is that I think we need to proceed. There's no sense, in my judgment, of making this thing go on any longer than it already has. It seems to me that, as Jeanne pointed out, this should have been done some time ago and I would hope that in my lifetime, at any rate, we can bring this to some kind of conclusion.

Alderwoman Herbig said, I'd like to clarify something lest I was misunderstood. I didn't mean that the people of Missoula were ignorant and wouldn't understand this, but they are not responsible for attending all the informational meetings such as we are, and I can't imagine that people who are working full-time would have the time to put in in instructional meetings on the water purchase that we have just expended, so I was not inferring that people were ignorant. It's the lack of time and energy that they would have to put it in, so this is just for clarification.

Alderman McLaughlin said, Lois, I work full-time and I made the meetings.

Alderwoman Shaffer said, I think the most usual comment that I heard while I was campaigning, and I did campaign more recent than some of you, and I commented in the Kaimin and in the Missoulian that I was in favor of the purchase of the water company, but the most usual thing that people said to me was, "We should have bought it a long time ago and just make sure that they don't gouge us as far as the price goes". In equating this

to sports, which I often do in a lot of circumstances, is we have to keep our eye on the ball and in this case the ball is the Rattlesnake water and Mountain Water isn't going to care about that so I'm ready to vote and I'm ready to vote the way I already had before.

Alderman Superneau said, I don't feel we're abrogating our duty because acquiring the water system is such a vital issue and the public at such a time wished to be involved. If I thought or could be sure we wouldn't be entangled in the courts for a long time, I would like to see us proceed at once. I feel a ballot by the voters will be positive for aquisition and save us money in the long run by not being involved in legalities. I do feel that we need to educate the public so there are no mysteries because all the right reasons are there for the acquisition.

Alderman Potts said, I think that by putting this on a ballot we're kind of knuckling under and showing that maybe we're afraid of the freeholders. I, for one, am not and I also fail to see where we're going to save any money putting it on the ballot because if we win at the ballot, we're still going to have to go through eminent domain and we'll be hiring lawyers, so I think it's just spinning our wheels and wasting some valuable time putting it on the ballot.

Alderman Hubbard said, a yes vote is not to put it on the ballot.

Upon roll call the vote was as follows:

AYES: Herbig, Potts, Ransavage, Rice, Sampson and Shaffer  
NAYES: Hubbard, McLaughlin, Superneau and Wagner  
ABSENT: Briggs and Hubbard

Motion carried: 6 Ayes, 4 Naves and 2 Absent.

Alderman Hubbard said, number 2 is ratification of labor contract with sewer plant employees. The Committee recommends the Council approve and authorize the Mayor to sign a collective bargaining agreement for employees at the sewer plant covering fiscal years 1985 and 1986 and I would so move. This agreement calls for a 5% increased wage and benefit package and mirrors other 2-year settlements with Police, Fire and Street bargaining units. The agreement contains no major language changes.

MOTION - labor contract with sewer plant employees

Alderman Hubbard moved to approve and authorize the Mayor to sign a collective bargaining agreement for employees at the sewer plant covering fiscal years 1985 and 1986.

Upon a voice vote the motion carried.

PLAT, ANNEXATION AND ZONING COMMITTEE - Alderman McLaughlin

Alderman McLaughlin said, number 1 is annexation Petition No. 6496 (2340 Cloverdale, Lot 15, Block 1, Meadowhill). After reviewing the staff reports the Committee recommends that the Council adopt the resolution of intention to annex 2340 Cloverdale and set a public hearing on the matter at the earliest convenient date and I would so move. The public hearing will be on August 20, 1984.

RESOLUTION NUMBER 439Z

A Resolution of intention to extend the corporate limits of the City of Missoula, Montana, to incorporate within the boundaries of the City of Missoula a certain tract of land which is platted and which is contiguous to the corporate limits of the City of Missoula and describing the boundaries thereof. (Lot 15, Block 1, Meadowhill Addition)



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MOTION

Alderman McLaughlin moved the adoption of Resolution Number 4397.

Upon roll call the vote was as follows:

AYES: Herbig, Hubbard, McLaughlin, Potts, Ransavage,  
Rice, Seapson, Shaffer, Superneau and Wagner  
ABSENT: Briggs and Hopkins

Motion carried: 10 Ayes and 2 Absent.

Alderman McLaughlin said, number 2 is site plan review for Charlene Billingsley. The Committee recommends that the Council approve the building plans submitted for two four-plexes as shown on the site plan, provided that curbing be installed along Grant St. to the satisfaction of the City Engineer's office and I would so move. When this parcel was rezoned from "R-I" single-family to "R-III" multi-family residential, the Council attached specific conditions, one of which being the requirement that the City Council review and approve the specific site plan. Normally, curb, gutter and sidewalk would be required along Grant St. for a development of this intensity. However, since a portion of Grant St. has been vacated and since Grant St. ends at the back of this lot, a sidewalk would serve no purpose. The curb and gutter should be installed to control traffic and water flow.

MOTION - site plan review for Charlene Billingsley

Alderman McLaughlin moved to approve the building plans submitted for two four-plexes as shown on the site plan, provided that curbing be installed along Grant St. to the satisfaction of the City Engineer's office.

Upon a voice vote the motion carried.

Alderman McLaughlin said, number 3 is amended plat of Tract 1, Bitterroot Home No. 2 - summary plat. After reviewing all testimony and documentation the Committee recommends that the Council approve the summary plat of the amended plat of Tract 1, Bitterroot Home No. 2 subject to the four conditions and findings of fact which are as follows: (1) That the plat be approved by the County Surveyor for format before it is filed with the Clerk and Recorder; (2) That sanitary restrictions be lifted by State and local health authorities; (3) That the parking lot on Lot 1-B be screened from Lot 1-A, zoned for single-family dwellings, as required by the off-street parking ordinance and that the screening be approved by the Planning office; and (4) That the official delineation of the 100-year floodplain and ground elevations be shown on the face of the plat and I would so move.

MOTION - amended plat of Tract 1, Bitterroot Home No. 2 - summary plat

Alderman McLaughlin moved to approve the summary plat of the amended plat of Tract 1, Bitterroot Home No. 2 subject to the four conditions as described above and findings of fact.

Upon a voice vote the motion carried.

Alderman McLaughlin said, number 4 is annexation Petition No. 6493 (2405 & 2407 McDonald, Lots 4 & 5, Block 67, Carline Addition). After reviewing the staff reports the Committee recommends that the Council adopt the resolution of intention to annex the parcel and to set a public hearing on the matter at the earliest convenient date, which I assume will also be on August 20, 1984 and I so move.

RESOLUTION NUMBER 4398

A Resolution of intention to extend the corporate limits of the City of Missoula, Montana, to incorporate within the boundaries of the City of Missoula a certain tract of land which is platted and which is contiguous to the corporate limits of the City of Missoula and describing the boundaries thereof. (Lots 4 & 5, Carline Addition)

MOTION

Alderman McLaughlin moved the adoption of Resolution Number 4398.

Upon roll call the vote was as follows:

AYES: Herbig, Hubbard, McLaughlin, Potts, Ransavage,  
Rice, Sampson, Shaffer, Suporneau and Wagner  
ABSENT: Briggs and Hopkins

Motion carried: 10 Ayes and 2 Absent.

Alderman McLaughlin said, numbers 5-8 will be handled under Old Business. Number 9 is Planning office quarterly report. Kristina Ford presented the Planning office quarterly report to the Committee.

PUBLIC SAFETY COMMITTEE - Alderman Sampson

Alderman Sampson said, number 1 is amend and create regular ordinance pertaining to dogs. The Committee recommends that a public hearing be held on August 13, 1984 to adopt the ordinance as amended and I so move. During the Committee hearing there were two motions; one by Donna Shaffer to change the ordinance to allow for an annual promotional affair with half-priced licenses and the other is to allow a maximum of four days kennels' fees for purposes of adopting dogs so that the fees wouldn't get out of hand to the place where it would be financially impossible to adopt any dogs.

MOTION - schedule a public hearing

Alderman Sampson moved to schedule a public hearing for August 13, 1984 on a regular ordinance pertaining to dogs.

Upon a voice vote the motion carried.

Alderman Sampson said, another item was again referred to Public Safety Committee for tomorrow afternoon concerning proposed interlocal agreement on garbage and animal control.

PUBLIC WORKS COMMITTEE - Alderman Potts

Alderman Potts said, number 1 is Changeorder No. 1 for Project #84-012 Front Street curb and sidewalk. The Committee recommends that the Council pass a resolution in accordance with Section 7-5-4308, M.C.A., approving Changeorder No. 1 to the contract with P. Kenneth Clark, Inc. and the City of Missoula for the curb and gutter construction of Project No. 84-012 Front Street - Adams to Pattee and I would so move. Bruce Bender, Assistant City Engineer, explained that items of extra work became necessary because of two reasons: (1) undesirable material was discovered under the existing sidewalks and (2) scope of sidewalk work was expanded. I believe there were two or three stumps in there. They had removed the trees but had neglected to remove the stumps and they had to get a machine in there to pull those. When they went to excavate for the sidewalk, they found some rubble and then another broken-up sidewalk under it so to put in a proper sidewalk, they had to take everything out.

RESOLUTION NUMBER 4399

A Resolution in accordance with Section 7-5-4308, M.C.A., procedure to modify municipal contracts, approving Changeorder No. 1 to the contract between P. Kenneth Clark, Inc. and the City of Missoula.

MOTION

Alderman Potts moved the adoption of Resolution Number 4399.

Upon roll call the vote was as follows:

AYES: Herbig, Hubbard, McLaughlin, Potts, Ransavage,  
Rice, Sampson, Shaffer, Superneau and Wagner  
ABSENT: Briggs and Hopkins

Motion carried: 10 Ayes and 2 Absente.

COMMENTS FROM MEMBERS OF COUNCIL AND ATTORNEY

Alderman Herbig said, on your informal agenda you probably noticed that there was a quarterly report from the solid waste division of the Health Department. I didn't want that referred at this time to Committee but I would like to call your attention to the information on the junk vehicle information and Jon Shannon said that he'd be glad to discuss this further if anyone would like any more information on it.

Alderman Rice said, I'd just like to remind everybody about two things. As John has pointed out and I've alluded to, we are not going out to western Montana, the golden triangle in Townsend this evening because KUVM is pre-empting us. The reason they're pre-empting us is to read John Hersey's "Hiroshima" which was first published in 1946, a year after the bombing of Hiroshima and this is, in fact, the 39th anniversary of that day, August 6.

Alderman Shaffer said, I have three things, two good and one not so good. First, I wanted to give my heartiest congratulations to the Mount Sentinel Little League All-Star Team on winning the State major league ~~base~~ ball championship. We all wish them the best of luck in San Bernadino, California when they'll play in the western regional tournament. Alderman McLaughlin's son Sean is the lead hitter on that team. He's following in his father's footsteps. The other thing is that I'm glad to see that John Verbung has a referral to Public Safety for the recycling center on North Orange. It's hard for a lot of us to understand why we bother with zoning and regulations and the Board of Adjustment hearings and the whole bit if, when you are denied a variance, you can go right ahead and do what you wanted to do anyway so I'm glad that we're going to try to handle this. I think, if Mr. Tremper, the landlord, knew what is going on there and was aware of the dangerous nuisance that it has become, he would help us to alleviate the situation. My third comment is on a good thing and that's that Bruce Ellsberg's dog is now appearing on stage in Santa Monica, California as Sandy in their local production of "Annie". Bruce adopted this dog from the Missoula dog pound when he was a University student here - onward and upward.

Alderman Ransavage said, I am very glad to be back to work with you. I express my gratitude to the Mayor and City Council at having been given permission to visit my family in Nice, France. It was very nice but it's nice to be back.

Alderman Superneau said, I'd like to remind everybody that the Farmer's Market is in full swing now on Tuesday nights from 6:00 to 8:00 and on Saturday mornings from 9:00 to 11:00. As you know, the Farmer's Market has been in operation for a great number of years and it's really an exciting place to go on Saturday.

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I don't know about Tuesday evening. It gives the small garden growers a chance to dispose of their extra food stuff that they would have to throw out otherwise and I think it's a real viable thing. You should attend it sometime.

Alderwoman Wagner said, speaking of Saturdays, last Saturday I had the privilege of being the grand marshal in the pet and dog parade. I have never seen a larger menagerie of kids, dogs, animals, wagons and costumers in my entire life. It was really a unique experience. The costumes were innovative and they showed a great deal of time, thought and work put in by lots of mothers and fathers in Missoula. If you didn't get a chance to see it, you missed a gratifying experience. It was really wonderful. There was a pink pig in a pink tutu and there was a little gal carrying a rabbit whose tail was longer than almost she was. It was just an incredible experience and I'd like to forewarn you to make sure to get out and see it next year when we have it and I'd like to thank Jocelyn Dodge and the staff of the Parks Department for giving Missoula such a wonderful experience.

Alderman McLaughlin said, Donna kind of beat me to the punch with the ball team but I'd like to congratulate the Mount Sentinel Major All-Star Little League Team which won the Montana State championship last week. They will be representing Mount Sentinel Little League of Missoula and the State of Montana in San Bernadino, California next week. They play Nevada at 6:30 p.m. next Monday and the game will be broadcast on KGRZ radio. They're a very good team and will represent the state well. I wish them all good luck, especially, my son Sean.

Alderman Hubbard said, Mount Sentinel, of course, is right in the heart of Ward 5 and I think they represent the ward very well and as past president of that league, it's very heartwarming to see the boys do so well. It's an honor that very few boys get, especially to travel around the state and meet other boys and now traveling on to San Bernadino and meeting people from outside the state of Montana and seeing what caliber of ball they can play. It's truly amazing to go out and watch these little guys play and see how well they do. Also, no one has mentioned that the Mount Sentinel senior league boys won the state tournament for Montana and then were defeated in Billings by Alaska to finally knock them out, so congratulations to the seniors too. Mount Sentinel certainly has got some ballplayers in that ward.

Alderman Potts said, for the past three weeks I have been involved in setting up a neighborhood watch in the area that I live in and I was very pleasantly surprised to see the turnout. We've had meetings and have had 30 to 35 people at each meeting and some people from farther over south in the ward have already had one of these and they have dropped their crime rate in that area dramatically with the establishment of this, so I would urge all the people to take a look at setting some up in their different wards.

Mayor Toole said, all of you at one time or another in your career should go to Camp Paxson when the Police Department and Sheriff's Department have their week long encampment for underprivileged kids from about seven years old to twelve years old. It's a marvelous show, if you go, and it gives you a good feeling all the time you're there. Donna was there and I was there and, of course, our Police Department should be congratulated for putting on such a show, for their time and the amount of effort they've put into it. We should remember those things about them.

#### CUMMENS FROM CITIZENS

There were no citizens who wished to speak at this time.

PUBLIC HEARING - An Ordinance pertaining to dog bites and exposure to rabies

Mayor Toole opened the Public Hearing and asked if there were any opponents who wished to speak.

Linda Lustig said, I'm representing the City-County Health Department. In April the Missoula County Health Board passed a regulation that revised their rabies regulation and that revision incorporated several changes recommended by the Center for Disease Control in Atlanta, Georgia. This amendment being considered tonight also incorporates those CDC recommendations and, in addition, that amendment clearly describes the chain of command provided in investigations, it exercises the need for strong rabies control in this community, and it provides an excellent protective measure for Missoula residents and their pets in the event of a potential rabies outbreak. Those of us on the staff of the Missoula City-County Health Department concerned with communicable disease, prevention, and control, heartily support this amendment and we urge its adoption.

Mayor Toole asked if there were any opponents who wished to speak. Since there were none, the Public Hearing was closed.

PUBLIC HEARING - Energy efficient subdivision regulations

Mayor Toole opened the Public Hearing and asked if there were any opponents who wished to speak.

Barbara Martens, Planning Office, said, the Department of Natural Resources gave the Planning Office a grant to research and write energy efficient subdivision regulations and the DNRC hopes to use the Planning staff's proposal as model regulations for other parts of Montana. There are two types of amendments that are being proposed. One is policy considerations and one is standards. The policy considerations are intended to serve as guidelines that will inform people of ways in which they can save energy when developing their land. The standards would be mandatory and are also intended to help save energy when subdividing land. Both the Missoula Valley Energy Conservation Board and the Missoula Planning Board have reviewed the proposals and are recommending that they be adopted. Since these public hearings were held, the staff has received recent comments from both County Surveyor and City-County Health Department and as a result of these recent comments which are included in the packets, we would like to offer a few additional amendments to what was proposed. The first amendment is one from the County Surveyor and that's in regard to standard D which is on page 13. What he has recommended is that this standard be deleted. The standard is in regard to the reduced roadway widths. Mr. Colville, County Surveyor, explained in his letter which is at the end of the packet his concerns over safety and also concerns over increased maintenance costs for narrower streets. In receiving the letter it is the staff's opinion that we need to further research the situation in order to address it in more detail and would like to address that at a later time when we review the total standards and subdivision regulations. The remaining amendments were from suggestions offered by the City-County Health Department. They suggested four amendments and these include the first one under Policy Considerations on page 11, number 4 which is site design for solar access. The Health Department has suggested an addition to that standard. It would start out: "All subdivisions should be reviewed by the Planning Office in concert with the Energy Coordinator to insure energy efficient site design and building location." Then the Health Department has suggested that the following be added: "The developers should identify preferred energy efficient building sites on each parcel within a subdivision. The location of the preferred energy efficient building site should, where practicable, maximize protected solar access for each lot, taking into consideration topography, the location of roads, sewage disposal or drainfield, needed vegetation, water supplies and local meteorology." The

remainder of the condition would stay in, so that's an addition. The next amendment they have suggested is in conjunction with the amendment that we just discussed and here they've requested that standard A, once again located on page 13, be deleted. This request was made because they strongly believed that this requirement would, in many circumstances, force the developer to locate the drainfield in an area that is less than optimal for the purpose of sewage disposal. The fourth amendment is for policy 8 which is on page 12. It talks about heating and cooling losses and prevailing wind directions. The Health Department has recommended that the words where it states: "should include prevailing wind directions", they recommend "for wind speeds greater than 5 miles per hour during the heating season" be added. They stated that this information will better represent prevailing wind directions for the entire heating season which would have significant impact on the heat loss in a home. The last amendment recommendation from the Health Department is to add one additional policy consideration and this would be number 11 and that would be called Supply of Utility Energy. There's a copy of this letter in your packet also. This would state: "Where economically feasible, the developer should provide for access to electricity and natural gas on each lot". The purpose of this amendment is to insure that consumers have access to the cheapest form of utility energy. The lack of available natural gas in the subdivision in Grant Creek has caused excessively high energy costs for consumers and has forced many to use wood heat as an economy measure which, in turn, degrades the air quality. The staff is recommending that these five amendments be incorporated into the draft.

Alderwoman Herbig said, Barbara, on your fourth one, on page 12, policy number 8, you have inserted words of "should include". Is the last sentence to stay?

Ms. Martens said, that would be deleted. It would end to read: "the five miles per hour during the heating season."

Linda Hedstrom, City-County Health Department, said, with the recommendations that Barbara just outlined, the City-County Health Department would like to go on record in favor of the proposed regulations.

Mayor Toole asked if there were any opponents who wished to speak. Since there were none, the Public Hearing was closed.

Alderman McLaughlin said, number 11 is an Ordinance creating the Hillview Heights area overlay zone. After reviewing all testimony and documentation, the Committee recommends that the Council accept the Planning Board's recommendation to adopt the ordinance setting additional development standards for the South Hills area and I would so move.

#### ORDINANCE NUMBER 2397

An Ordinance creating the Hillview Heights area overlay zone.

#### MOTION

Alderman McLaughlin moved the adoption of Ordinance Number 2397.

Upon roll call the vote was as follows:

AYES: Herbig, Hubbard, McLaughlin, Potts, Ransavage,  
Rice, Sampson, Shaffer, Superneau and Wagner  
ABSENT: Briggs and Hopkins

Motion carried: 10 Ayes and 2 Absent.

Alderman McLaughlin said, number 12 is amendments to the Planned Unit Development ordinance. After reviewing all testimony and

documentation, the Committee recommends that the Council accept the Planning Board's recommendation to adopt the ordinance amending the Planned Unit Development ordinance and I would so move.

#### ORDINANCE NUMBER 2398

An Ordinance amending Chapter 19.50 of the Missoula Municipal Code, known as the Planned Unit Development District--Residential, by amending Section 19.50.020 and adding Section 19.50.030 as detailed.

#### MOTION

Alderman McLaughlin moved the adoption of Ordinance Number 2398.

Upon roll call the vote was as follows:

AYES: Herbig, Hubbard, McLaughlin, Potts, Ransavage,  
Rice, Sampson, Shaffer, Superneau and Wagner  
ABSENT: Briggs and Hopkins

Motion carried: 10 Ayes and 2 Absent.

Alderman McLaughlin said, number 13 is amendments to the Design Review Board ordinance. After reviewing all testimony and documentation, the Committee recommends that the Council accept the Planning Board's recommendation to adopt the amendments to the Design Review Board ordinance and I would so move.

#### ORDINANCE NUMBER 2399

An Ordinance amending Ordinance Number 2270, now Chapter 19.86, Section .050 (terms of membership) of the Missoula Municipal Code by amending the term of membership from one year to variable length from one to three years. (Design Review Board)

#### MOTION

Alderman McLaughlin moved the adoption of Ordinance Number 2399.

Upon roll call the vote was as follows:

AYES: Herbig, Hubbard, McLaughlin, Potts, Ransavage,  
Rice, Sampson, Shaffer, Superneau and Wagner  
ABSENT: Briggs and Hopkins

Motion carried: 10 Ayes and 2 Absent.

Alderman McLaughlin said, number 14 is amendments to the central business district ordinance. After reviewing all testimony and documentation, the Committee recommends the Council accept the Planning Board's recommendation to adopt the amendments to the central business district ordinance and I would so move.

#### ORDINANCE NUMBER 2400

An Ordinance amending Chapter 19.26 (central business district) of the Missoula Municipal Code to promote the rehabilitation of existing structures by amending Sections 19.26.010, 19.26.030, 19.26.040, 19.26.050, 19.26.100, 19.26.110 and 19.26.120.

#### MOTION

Alderman McLaughlin moved the adoption of Ordinance Number 2400.

Alderswoman Herbig said, as a bit of information, when I was doing my campaigning in the fall, I ran into a problem with one of my constituents who was very upset, thinking that this was the amendment that affected her property; when, in fact, it wasn't so I would like to clarify that her property, which

is right next to the Watson Apartments, was affected by rezoning of the central business district in 1975, so it's not this action tonight. It's the previous one that affected that property. In other words, the Watson Apartments now has a parking facility right up to her property line which takes light away from her basement apartment.

Upon roll call the vote was as follows:

AYES: Herbig, Hubbard, McLaughlin, Potts, Ransavage,  
Rice, Sampson, Shaffer, Superneau and Wagner  
ABSENT: Briggs and Hopkins

Motion carried: 10 Ayes and 2 Absent.

The following meetings were announced:

Appointments	Fri., 8/10, 3:00
Finance and License	Thurs., 8/9, 4:00
Judicial Review	Wed., 8/8, 3:45
Plat, Annexation & Zon'g	Wed., 8/8, 4:30
Public Safety	Tues., 8/7, 4:30
Public Works	Tues., 8/7, 3:15

Alderman Rice moved that the meeting adjourn at 8:45 p.m.

Respectfully submitted,

Karen Abels  
Karen Abels, Secretary



PUBLIC MEETING August 8, 1984 MISSOULA COUNTY COMMISSION

Chairman Bob Palmer called the meeting to order at 1:30 p.m.

Also present

were Commissioners Barbara Evans and Ann Mary Dussault.

HEARING: PROPOSED ENERGY EFFICIENT SUBDIVISION REGULATIONS

Barbara Martens of the Planning Office gave the background for these proposed regulations: The Department of Natural Resources (DNRC) gave the Planning Office a grant to research and write energy efficient subdivision regulations. The DNRC hopes to use the Planning Staff's proposals as model regulations for other communities in Montana.

Two types of amendments are proposed: Policy Considerations and Standards. Policy Considerations are intended as guidelines that will inform people of ways to save energy when developing

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their land. Standards are regulations that are mandatory and are also intended to help save energy when subdividing land.

Both the Missoula Valley Energy Conservation Board and the Missoula Planning Board reviewed the proposals and recommend their adoption. Since the original hearings, comments received from Surveyor Dick Colvill and the Health Department have led the Planning Office to formulate five amendments to the regulations ~~for~~ which they ~~also~~ recommend ~~approval~~ be incorporated into the original document.

Bob Palmer opened the hearing to public comment. The following people spoke:

1. C. E. (Abe) Abramson, real estate broker, spoke in support of the regulations but suggested that a law school summer intern be employed to clarify the language. He questioned whether there is any consultant in Missoula who would feel qualified to do a shadow pattern or prevailing wind study, and he suggested that those items be deleted. Also, ambiguous language, such as "if possible" could lead to potentially troublesome judgement decisions.
2. Bob Johnson OF Missoula Rural Fire had questions from Chief Bruce Suenram regarding road width and side-of-road parking but dropped them since the road item has been deleted.

No one else wished to speak so Chairman Palmer closed the hearing.

Barbara Evans said that she supports the idea of putting out a pamphlet giving suggestions for saving energy and money, but she opposes turning the suggestions into standards, and she opposes including items for which regulations already exist, such as inclusion in an urban transportation district. Ms. Evans also would like departments to conduct their business with other departments personally rather than via memo in order to receive input early enough to avoid extensive amendments.

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Ann Mary Dussault asked for time to review the proposed regulations in detail. The Commissioners agreed to postpone action until the public meeting of August 29, 1984.

There being no further business to come before the Commissioners the meeting was adjourned at 3:1

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## APPENDIX D

### ENERGY USE CONSIDERATIONS



## ENERGY USE CONSIDERATIONS

Lois Jost, City-County Energy Coordinator

The consideration for energy-efficient subdivision regulations should reflect our goal as established in Missoula County to decrease our dependence on non-renewable energy sources. Missoula County should join with the region in reducing our dependence on costly conventional energy supplies as well. Energy-efficient subdivision regulations mean changing the way we site and design buildings. However, the change is very minimal. Building codes and land development standards already address issues like placement and height of buildings, streets and facilities, windows and landscaping (which affects solar access and the use of solar energy). These standards can be revised specifically to consider siting for appropriate considerations of the building's external environment. Usually it will take only a slight change in the way we now provide those services.

The Northwest Power Planning Council has indicated that both energy conservation in new building design and land-use planning present one of the most significant opportunities for achieving cost-effective conservation in the residential sector in the Northwest Region. In a memo from Henry Markus of the Oregon Department of Energy, he stated the 1986 to 2005 value to new NON-solar, residential, single-family, electrically heated dwellings in the region which have energy site planning, assuming all cities and counties in the region adopt land-use regulations, is 53 average megawatts, or the 1984 present value to ratepayers of one billion dollars.<sup>1</sup> A 1974 study done by P. P. Auchenbach determined that 50% of the energy consumed in new buildings could be saved by better site planning and design of buildings and equipment. Many lenders across the country are beginning to include energy costs in their principle, interest, taxes and insurance loan appraisals. They believe that increasing energy costs erode the homeowners financial capability to meet mortgage payments. Luckily, Missoula is not the first county to attempt adoption of energy land-use regulations. We are able to draw from a variety of sources to support the land-use policies and regulations that are being proposed.

To use the building's environment to its best advantage consider climate and land form effects on the energy flow of the building. The factors which should be addressed are: (1) temperature patterns on site, (2) precipitation on site, (3) wind patterns, (4) solar considerations, (5) orientation of the slopes in relation to the site, (6) the site's topography, (7) existing and proposed vegetation, and (8) surrounding buildings.<sup>2</sup> The object is to use the shape, structure and site of the building to maintain the internal and external equilibrium. A structure and site should try to inherently insure climatic conditions that most people regard as comfortable. The comfort zone can be achieved by optimizing natural processes in designing or planning or by mechanical means which require additional energy. Therefore, affective site planning and optimum building design can greatly reduce energy consumption in new buildings.

When energy conservation is a goal in building design, the sun is perhaps the single most important natural element to consider. It is the major component considered in this narrative. The proposed policies and standards lean heavily toward solar access provisions. As previously stated, the intent of an energy-efficient subdivision policy is to consider all of the climatic conditions of the site and their relation to the building and site design. An important objective of sun siting is to shape and orient buildings so as to reduce seasonal variations in sun energy and equalize insulation from summer to winter. This objective can best be achieved by considering solar access provisions into the siting process rather than allowing building orientation to be dictated by street, lots and setback requirements as they presently exist.

Studies indicate that usable solar energy contributes about 20% of the heat even in non-solar homes. Much of this benefit would be lost if the home is shaded or improperly sited. A true south orientation allows for the greatest solar insolation. Orienting a house to varying degrees azimuth from true south proportionately lowers the percentage of potential solar gain for that building (see Chart A below) (Parker, et al., 1984).

#### CHART A

##### ORIENTATION CORRECTION FACTOR

AZIMUTH FROM TRUE SOUTH	FACTOR (PERCENTAGE OF POSSIBLE SUN)
0°	1.00
15°	.98
30°	.90
45°	.79

If the site is less than optimal for a passive solar system, the combination of slightly greater energy conservation measures and smaller south glass areas will usually yield a house equal in efficiency to its passive solar counterpart.

Energy-efficient design of a building is to be encouraged and is specifically addressed in building codes. Solar access provisions certainly do not preclude or discourage energy-efficient design. Proper solar design, siting and energy conservation are ideal complements to each other. Consumers should not be limited to any one of these options. Solar and additional weather considerations can save an additional 5 to 20 per cent of an energy-efficient home's heating cost.

A solar site survey should be conducted to determine the actual blockage from vegetation and buildings at the building site. The solar site survey is used to determine the amount of sun light seen by the glazing, and the time of day and season when it is seen. Optioning a site for solar access includes eastern and western orientation choices. It is preferable to choose the southeasterly aspect over a southwestern orientation. Early morning warm-up may be desirable, while afternoon heat gains from west windows may lead to overheating. In site selection and energy conservation criteria, the key is to use the sun's power with care. If the sun is available, do take advantage of it by orientating the long access of the house to a southern access. If possible, site the house to avoid sunlight obstructions such as nearby buildings or trees. Another good practice is planting deciduous trees which shade in the summer and allow solar access during the cold months.

In addition to orientation of the house on the site in relation to the true south, sun aspect, there are various other factors which must be considered in a site specific analysis:

1. The shading from other buildings or trees, in relation to the access of sunlight, is an important factor in determining the feasibility of using solar energy at that site. Shadow patterns can be determined by the use of a sun chart.
2. The type of solar technology which is being considered by the builder-developer should be taken into consideration. Systems are classified as passive or active. The building and its system must be arranged and suited accordingly.



3. The orientation and placement of rooms within the house should be a part of the mechanical heat distribution consideration.
4. Orientation, type and placement of windows is a crucial element in building design and site planning.

The optimum glass area is determined by many factors. Distributing windows equally on all sides of the building is not necessarily a good option. Non-south facing windows should be kept to a minimum. Where such windows are necessary because of views, daylight or building code requirements, they should be shaded from the hot summer sun. As more insulation is added to the home, the thermal integrity of the building improves, which lowers the optimum glass area. When thermal mass is added to the building, the solar gains are stored during the day and released at night. This affects increases optimum glass area, as does the orientation and type of glass. The type of movable window glass insulation is also a key consideration.

Energy design considerations in the home, orientating homes, lots, streets and site planning to optimize solar access costs little or nothing. Siting and landscaping considerations as well as home design are part of the construction planning and design process. Several landscape architects believe that providing solar access in new developments takes no additional time and becomes engrained with a little experience. Providing solar access requires no radical change from the traditional way of platting a development. In addition to saving energy now, proper solar orientation and access preserves the opportunity to retrofit with solar in the future. According to John Duffield, solar energy in Missoula, both passive and active systems, already is cost-effective in many applications, depending on the design and other factors unique to any particular case.<sup>3</sup> Good solar technology is available today. As conventional energy costs rise and the solar technology and design develops, any individual or homeowner may wish to add solar to their homes in the future. For this reason, legal protection of solar access may become a necessary mandate of our local government.

SOLAR ACCESS SHOULD NOT ONLY BE PROVIDED BUT PROTECTED AS WELL. The Oregon Department of energy Solar Access Strategy indicates that there are three basic cases to consider: (1) retrofits in developed neighborhoods where protection from vegetation is the major concern, (2) in-fill and single lot development and partitions, and (3) subdivisions and planned unit developments.

In developed neighborhoods, little can be done to provide access, however, where available by chance, it may still be possible to protect it. In new developments, the concern is with platting and protecting access to both the lot at issue and to neighbors.<sup>4</sup> Solar access should be provided where feasible. It is not possible in all cases and solar access must not be the overriding consideration, however, it should be given more consideration than it is in the present subdivision regulations. To ensure that it is given due consideration, standards must ensure that the benefits and burdens are equitable and that all parties have equal consideration.

The following pages take a look at a 1500 square foot home and some of the energy savings which can be demonstrated in Missoula by the placement of windows, wind reduction on the structure and savings from non-shading of the south wall.<sup>5</sup> These calculations may be of interest to anyone who is trying to specifically determine exact cost paybacks for such factors as solar design features and siting considerations for energy efficiency.

## WIND REDUCTION SAVINGS THROUGH:

### CONDUCTION LOSS REDUCTION

Assumptions: South wall 50' long, 8' feet high, insulated to R20.

At 0 mph wind, the heat resistance of the wall is 19.33 with a surface film having a heat resistance of 0.67. As the wind velocity increases, this surface film resistance decreases. At 3 mph, the R-value of this surface film is 0.43, and at 6 mph it is 0.34. Missoula has an average wind speed of 6 mph and an effective wind barrier can reduce this by 50% to 3 mph. This change in the surface film heat flow resistance causes an increase in the overall wall heat flow resistance by .00023 BTU/Sq.Ft./°F. For the above-described wall having 10% of its area in windows the heat loss reduction can be calculated using this formula:

$$\text{BTU} = .00023 \times \text{Ave. Temp.} \times 360 \text{ Sq.Ft.} \times 24 \text{ Hrs/day} \times \text{days/month}$$

<u>MONTH</u>	<u>AVE. TEMP.</u>	<u>BTU SAVINGS</u>
SEPT	55.3	578
OCT	44.1	1288
NOV	32.3	1949
DEC	24.7	2483
JAN	20.8	2723
FEB	27.2	2103
MAR	33.3	1953
APR	43.9	1258
MAY	52.2	789
		<u>15124</u> BTU's saved per year

For a gas-heated home with a furnace efficiency of 75%, this savings amounts to \$0.09. For an electrically-heated home the savings is \$0.18.

### INFILTRATION REDUCTION

The following equation, taken from a National Bureau of Standards study in 1977, relates air changes in a building to wind speeds and temperature differences between inside and outside the structure.

$$I = 0.15 + 0.013W + 0.005T \quad \text{where } I = \text{air changes per hour} \\ W = \text{wind speed in mph, and} \\ T = \text{temperature differential}$$

If we assume a temperature differential of 0, we find that for every 1 mph increase in wind speed, there is a corresponding 5.7% increase in infiltration. Therefore, if proper wind barriers reduce wind speeds from 6 to 3 mph, the resulting decrease in heat loss by infiltration will be about 17%. For an average 1500 sq.ft. house having an air change rate (ACH) of .75 per hour, the ACH will be reduced to 0.62. This amounts to about 6.3 mmBTU for an average year. At a 75% furnace efficiency for gas, this amounts to \$38.66 per year. For electric heat, the savings is about \$72.36 per year.

## SAVINGS REALIZED THROUGH NON-SHADING OF SOUTH WALL DURING DEC. AND JAN.

### SOLAR GAIN THROUGH SOUTH-FACING WINDOWS

Assume 20% of wall in windows. Therefore window area = 80 sq.ft.

Total solar radiation per months of December and January per square foot of wall equals 49,680 BTU's. Total for 80 sq.ft. is:

$$49,680 \times 80 = 3,974,400 \text{ BTU's}$$

Therefore, the total dollar savings realized is \$24.00 for gas heat and \$46.60 for electric heat per year.

### SAVINGS REALIZED FROM SOLAR HEATING OF SOUTH WALL

Heat loss through a wall is dependent on the temperature differential across the wall. Solar radiation on a south wall will warm that wall and, thus decrease the temperature differential. In order to determine any change in heat loss due to solar radiation, it is first necessary to determine the temperature of the exterior surface of the wall under solar radiation conditions. The following equation is used for that purpose.

$$t_e = t_o + \alpha I_t / h_o, \text{ where}$$

$t_e$  = surface temperature  
 $t_o$  = average outdoor air temperature (25 °F.)  
 $I_t$  = total solar radiation incident on the surface (138)  
 $h_o$  = coefficient of heat transfer at the surface (0.68)  
 $\alpha$  = absorptance of the surface for solar radiation (.4)

$$t_e = 25 + (0.4 \times (138/.68)) \\ = 106^\circ \text{ F.}$$

Heat flow through the wall is determined by using the R-value of the wall and multiplying by the temperature differential. Heat will flow from the warmer to the cooler side. In this example,  $dT = 106 - 65 = 41^\circ$ , and

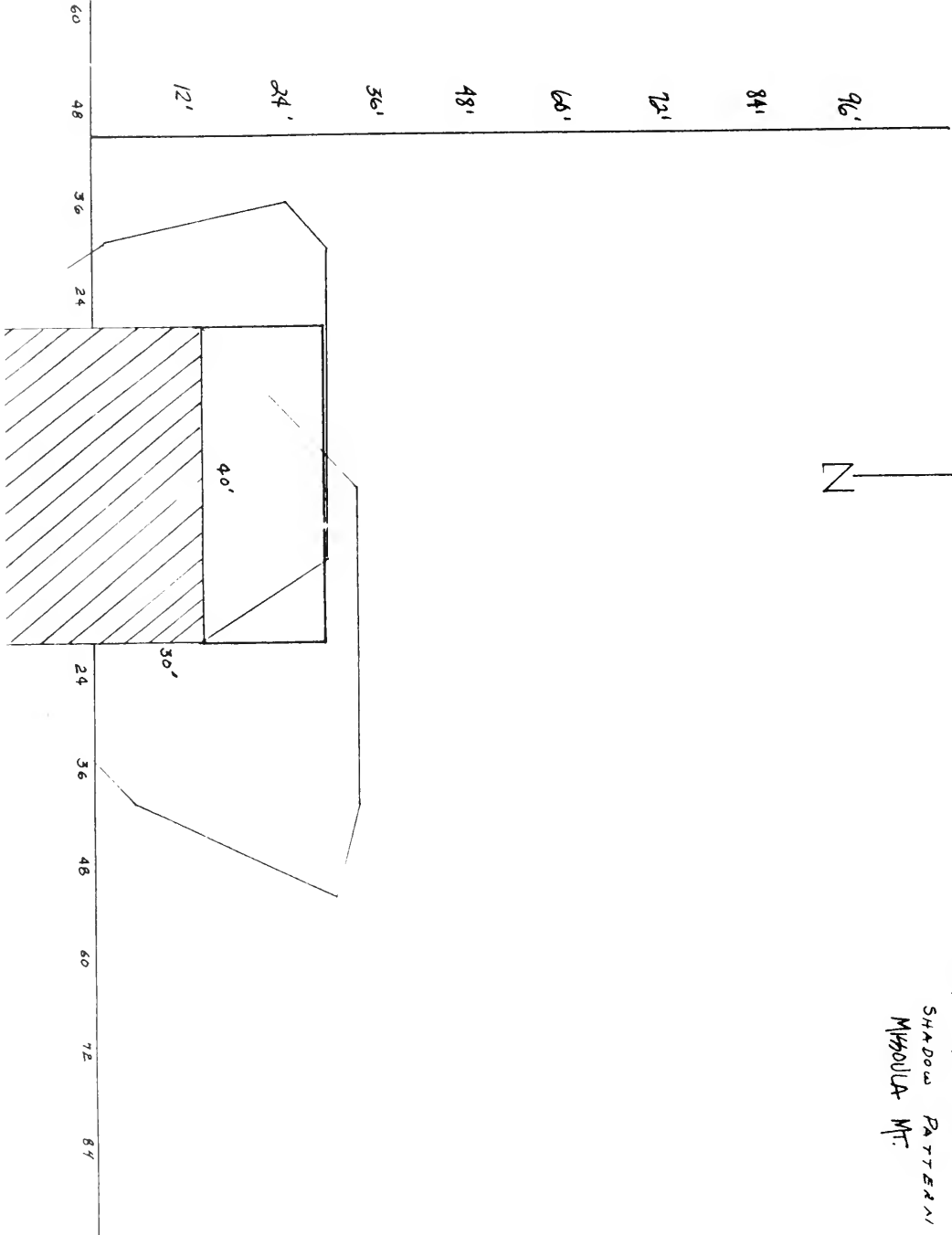
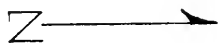
$$\text{BTU} = .05 \times 41 = 2 \text{ per sq.ft. per hour, or} \\ = 4428 \text{ per day through the entire wall.}$$

Without the solar gain on the wall the temperature difference would have been  $65 - 25 = 40^\circ$ , the Btu transfer would have been 4428 per day, but in the reverse direction. Therefore, the effect of the solar radiation on the wall was to save 4 BTU/sq.ft./hour or a total of 540,216 BTU over a 2-month period. For natural gas this amounts to \$3.52 and for electricity, \$6.78.

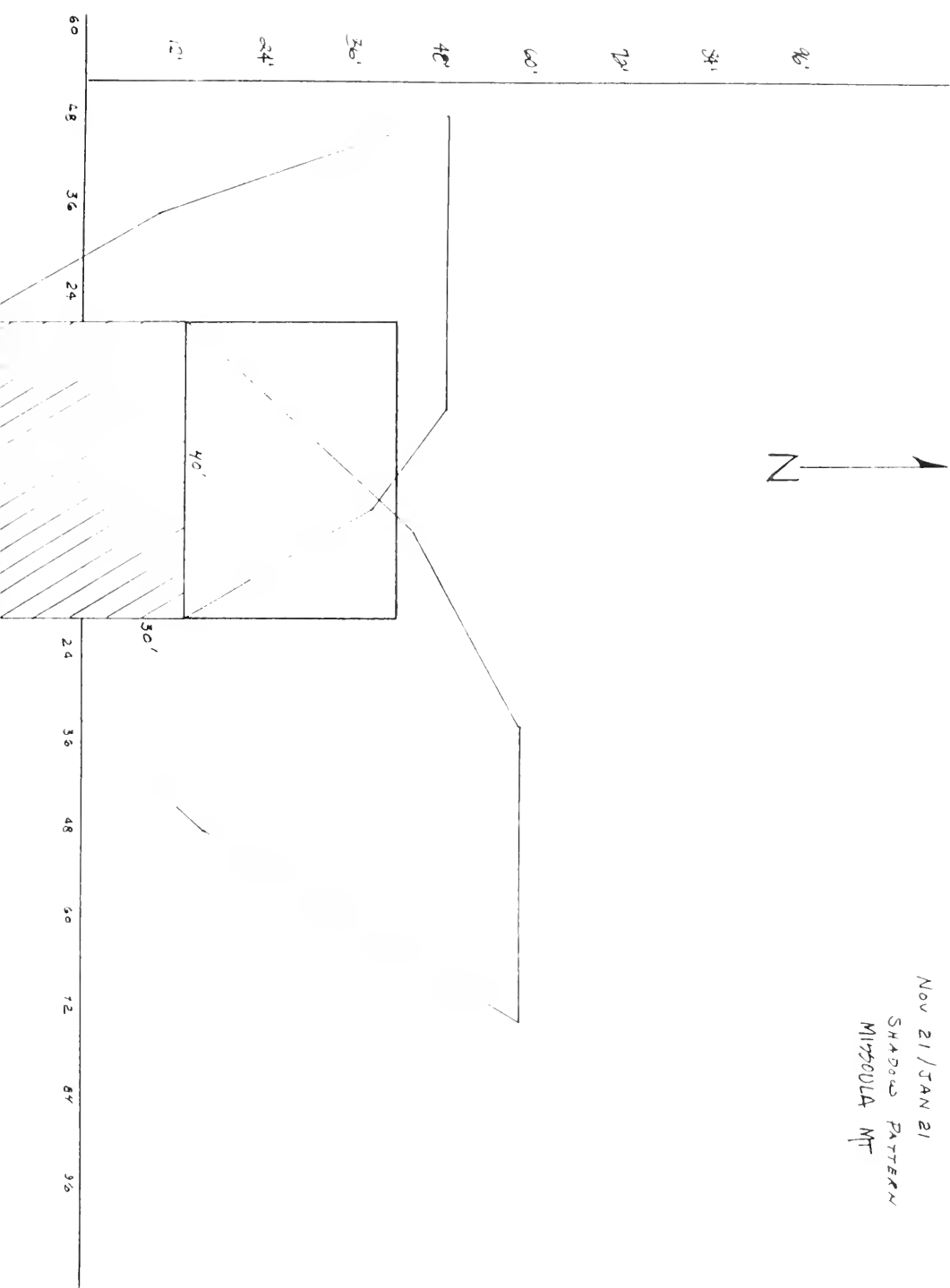
### TOTAL SAVINGS FROM NON-SHADING OF SOUTH WALL

	gas	electric
Solar gain through windows	\$ 24.00	\$ 46.60
Solar gain through walls	3.52	6.78
Total	27.52	53.38

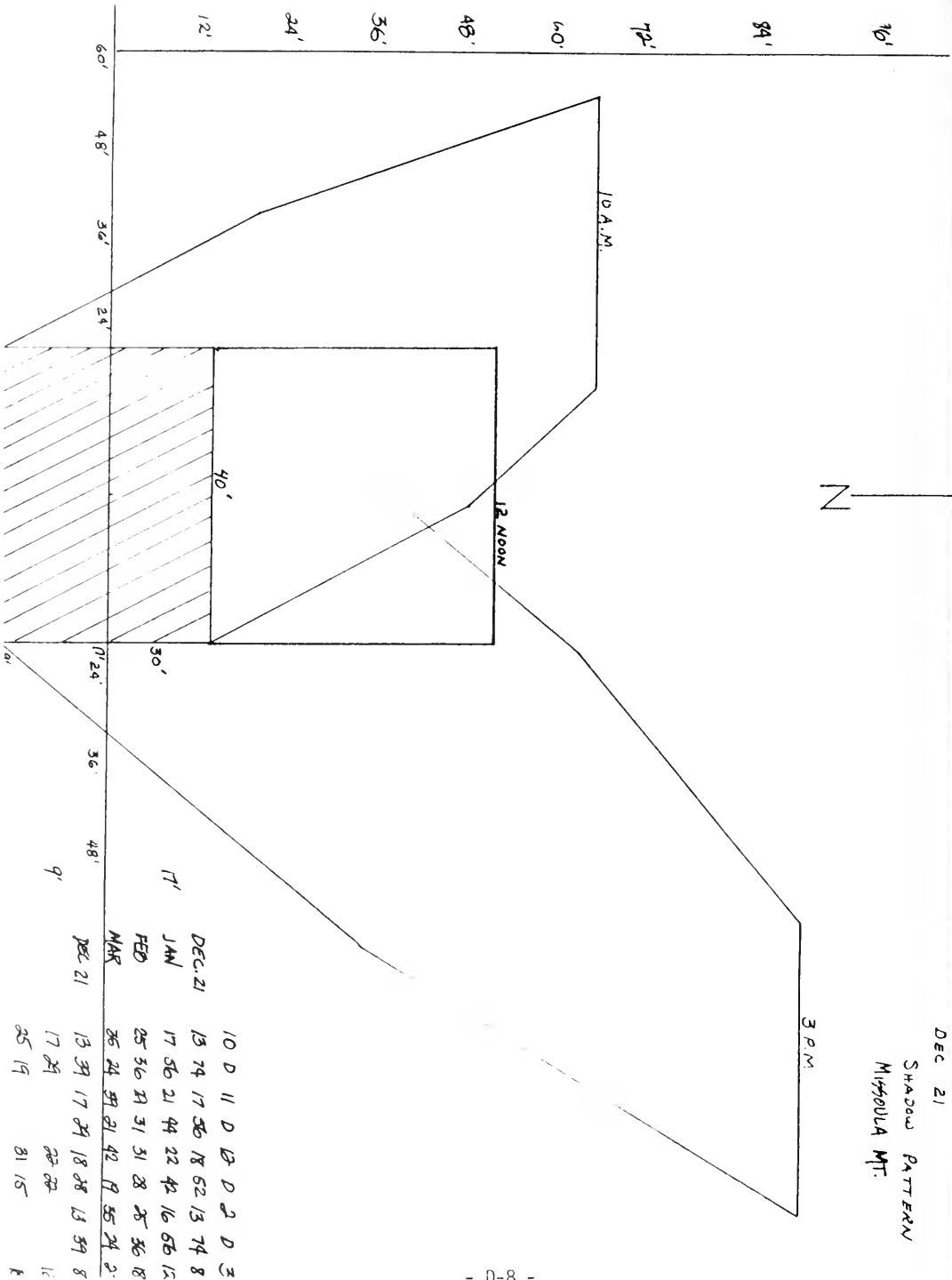
OCT. 21 / FEB. 21  
 SHADOW PATTERN  
 MISSOULA MT.



Nov 21 / JAN 21  
 SHADOW PATTERN  
 MISSOULA MT



Dec 21  
SHADOW PATTERN  
MUSHOLA MT.



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PROPOSED  
ENERGY-EFFICIENT ZONING REGULATIONS  
FOR  
MISSOULA CITY AND COUNTY  
1985

Prepared by the Missoula  
Office of Community Development

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## Acknowledgments

The Bonneville Power Administration (BPA) sponsored a grant to the Missoula Office of Community Development (OCD) to research energy conservation as it relates to zoning regulations. This document reports the results of OCD's research.

## Note

The Department of Natural Resources and Conservation (DNRC) is not responsible, and disclaims liability for any results or lack of results that may or may not accrue from the adoption of or failure to adopt any of the information contained in this report.

## ENERGY-EFFICIENT ZONING REGULATIONS

### INTRODUCTION

The Missoula Office of Community Development (OCD) recently proposed a number of subdivision regulation amendments to the Missoula County Commission and City Council for review. These regulations are intended to promote energy conservation through the subdivision of land. The process of drafting those amendments was funded in part by the Montana Department of Natural Resources and Conservation (DNRC).

Subdivision regulations include such items as lot orientation, street widths and design, drainage, soil stability, police and fire services, and sewer treatment. Subdivision regulations do not address lot sizes, how the land can be used (residentially, commercially, or industrially), landscaping, setbacks, or the number of buildings allowed per lot. These standards are regulated by zoning.

To address the conservation of energy in a comprehensive manner, both zoning and subdivision regulations should be reviewed. Some communities have gone a step further, and adopted regulations that address energy use in a third area, building construction, which is governed by state and local building codes. However, Montana law prohibits local communities from adopting building codes which are more restrictive than those outlined by the state. Consequently, Missoulians cannot revise their building codes to require added insulation or better glazing.

The Bonneville Power Administration (BPA) asked OCD to propose zoning regulations to help conserve natural resources and reduce energy consumption. BPA believes that such regulations are an important part of an overall plan to save energy throughout the Pacific Northwest.

In addition to funding a study of zoning regulations, BPA encouraged Missoula County and the City of Missoula to join School District No. 1 and Missoula County High Schools to devise an Energy Management Plan. The plan is being drafted through the Energy Coordinator's Office and covers subjects such as "building energy management, utility monitoring, policy recommendations, employee education, financing options, and implementation of energy-efficient land-use regulations. (For more information on the Plan, contact the County Commissioners' Office.)

This report is written about zoning regulations and how they can be altered to help promote the saving of energy in the City and County of Missoula. These regulations will then become part of the Energy Management Plan.

#### ZONING AND TYPES OF ENERGY USE

Zoning can be used to regulate several types of energy use:

1. By locating high-density residential land uses (apartment buildings) near service areas (such as downtown and the mall), gasoline use can be diminished since distances between homes and shopping malls or work places are reduced.

2. By limiting the height of buildings, shading of neighboring solar appliances can be prevented.
3. By allowing restricted use of setback areas, zoning can encourage the proper placement of solar panels, greenhouses, or other solar devices.
4. Zoning can encourage the efficient heating and cooling of buildings by permitting the clustering or grouping together of buildings.  
Clustering reduces the number of walls exposed to cooler (or warmer) outside air temperatures, and thus saves natural gas and electricity used by furnaces and air conditioners.
5. Zoning can also have a limited impact on the design of roads. In certain zoning districts, the developer builds a road system to serve the project. In these cases it is often possible to reduce road widths to save asphalt, construction, and maintenance costs.

By using zoning to help save energy costs in these ways, Missoulians will have additional income to use for other purposes. Finally, given the ever-decreasing supply of fossil fuels, area residents will become less dependent on outside interests for their supply of energy. OCD proposed several amendments to help Missoulians attain these goals. The amendments begin on page 15.

## RESOURCE DOCUMENTS

The attachments to this document outline the data, gathered by OCD, regarding energy conservation measures either proposed or adopted in other communities or by the private sector. While a great deal of information can be found regarding solar access and shading, lot orientation, and building codes; there are little data published that are directly applicable to western Montana communities. Missoula's mountainous topography, overcast winter skies, and short summer all limit the usefulness of regulations generated in the south and southwestern states. However, the same limitations point out the need to protect the limited solar access that is available to Missoulians. Combined with the subdivision regulations, these amendments to zoning codes will help promote energy conservation in much the same way as in other communities throughout the nation.

## CURRENT REGULATIONS

There are a number of barriers to energy conservation in current zoning regulations (see the Weinstein Report: Barriers to Zoning Regulations in Missoula County.) The reasons for the barriers are varied, and range from the desire to promote open space, to the need for quiet, relatively noise-free neighborhoods. Building and fire codes often require buildings to be separated from each other to ensure the safety of occupants should the structures catch fire. In addition, many communities have ordinances that prohibit the construction of any structure that might adversely affect the beauty of a neighborhood.



Most zoning codes distinguish between primary and accessory structures. Primary structures are those that house the main use of the land, such as a single-family house. Accessory structures are secondary to the main building. Common accessory structures are garages and storage sheds. Some communities define solar collectors as accessory structures. In most cases, the placement of accessory structures is strictly controlled: setbacks must be met, height restrictions are applied. However, when a community establishes energy efficiency as a goal, restrictions on solar collectors are sometimes relaxed or removed. If restrictions are removed entirely, problems can arise. If solar collectors were allowed in any zone without restriction, an individual might set 55-gallon drums along a property line, and claim that they provided hot water. This could in fact be the case, but neighbors might complain that 30 or 40 such drums do not belong in a residential area.

#### BARRIERS TO ENERGY EFFICIENCY IN THE ZONING CODE

The following section discusses the barriers to energy efficiency identified in the Weinstein Report. In addition, OCD outlines why such barriers exist, and how serious their impact is on Missoula. In some cases, a solution to the problem caused by the barrier is suggested.

1. "Solar energy and other passive design structures" should be defined as accessory uses.

Missoula's Comprehensive Plan, to be completed early in 1985, specifically acknowledges the need for energy planning. A task force (one of ten) reviewed energy use in Missoula and how it affects residents. When the revised plan is

updated, there will be a section addressing energy, and how it can be conserved. If the City and County Planning Board and governing agencies believe that solar structures need to be mentioned as accessory uses, an amendment to the ordinances will be drafted. However, given the definition of such accessory uses in city and county codes, OCD believes that the definition is broad enough to include such structures. In fact, several structures have been approved under today's codes.

2. Building height definitions often restrict the height of solar systems and can unnecessarily limit their placement and use.

The height of buildings is limited to protect the privacy of neighbors and to promote circulation of light and air. In addition, by limiting height, shading of adjacent structures is often prevented. Thus, the Weinstein Report suggests removing these limits, such an action could result in construction of a solar structure that blocked the solar access of a neighbor. Consequently, OCD has proposes amending the existing height restrictions in some cases rather than removing them.

3. By definition, open-space areas must be devoid of structures "even though open space areas may have the only or best available solar access."

Open space serves to separate buildings, to promote circulation of air, to allow light to enter a lot, and to provide access for safety personnel (police and fire). In addition, most communities have recognized the value of protecting the pleasing appearance that open, landscaped areas provide. To indiscriminately allow the construction of buildings or accessory structures in

such open-space areas would not be in the best interest of the public's health, safety, and welfare even though, it may save energy. However, there are methods of addressing such concerns on a site-by-site basis. These include review by the Board of Adjustment, the Design Review Board, or OCD. Several proposals are in the amendments section of this document to address these problems.

4. The failure to list solar energy systems as permitted uses may lead to zoning interpretations that such energy systems and structures are not permitted uses.

Solar energy systems should not be listed as both permitted and accessory uses. If such systems were listed as permitted uses, they could be installed in residential areas without a residential dwelling on the lot. This could lead to an individual covering a residential lot with an energy system designed to provide energy to an outside area. Solar energy systems should be designed and installed to serve as accessory uses, to the primary uses, on the parcels of land where they are erected.

5. The definition of setback implies that such areas cannot be used as locations for solar energy systems, or other passive design structures, even though such areas may have the best, or only available solar access.

See explanation number three above.

6. The definition of yard may require that yards be free of solar energy systems.

See explanation number three above.

7. Minimum front-yard setbacks do not allow buildings on the south side of a street to be built closer to the front property line, when the standard setback would result in southside shading by topography, structures, or vegetation.

Front-yard setbacks serve several purposes. In residential areas, setbacks provide space between houses and streets resulting in reduced noise. They also allow dispersion of automobile pollutants and permit installation of pedestrian paths and sidewalks, without infringing on the privacy of residents. Setbacks contribute to the appeal of an area; many Missoullians find the university neighborhood appealing because of tastefully landscaped front yards. Therefore, OCD does not recommend permitting structures in front yards. However, in exceptional cases, the Board of Adjustment would have authority to allow construction in an area, where it is not normally permitted.

8. Rear-yard setbacks do not allow buildings on the north side of a street, to be built closer to the rear lot line for solar energy systems, when the standard setback would result in south-side shading by topography, structures, or vegetation.

Rear-yard setbacks, in residential areas, would be amended to permit the placement of certain accessory structures within conventional setbacks. Setbacks in commercial areas are minimal (10 feet) or nonexistent (zero lot

lines). In industrial zones, 20-foot setbacks are maintained for safety reasons. However, the city and county Boards of Adjustment could allow individuals to build closer to the property line if there is a good reason to do so.

9. Narrow side yards, combined with height regulations, can cause substantial solar shading.

See sections two and three above.

10. Narrow lot widths can cause solar shading of buildings.

Narrow lots are often permitted to encourage high-density living areas. By clustering living units together, energy used for heating and cooling is reduced. In addition, putting housing close to commercial areas saves travel time and gasoline. Consequently, it may be desirable to keep provisions for narrow lot widths.

11. Fencing and landscaping requirements do not include requirements to protect solar access.

See section 4 of the proposed regulations.

No other barriers to energy conservation were identified in the zoning code. Zoning codes can encourage or discourage the conservation of energy. Thus, zoning in the county should discourage sprawl, and encourage high-density residential units near downtown and the mall.

## AMENDMENT PROPOSALS

If the proposed amendments are incorporated into city and county zoning standards, they will supplement the current rules and regulations.

Amendments are generally applicable to all sites, but will probably not be used by many landowners in the near future, because solar collectors are not yet cost-effective in Missoula County. Solar structures should be encouraged if their use is not detrimental to neighbors. Although OCD is proposing additional regulations, if adopted, the regulations should make installing solar structures easier than it is today. It will be easier because hearings by city and county Boards of Adjustment will be replaced by OCD review during conditional-use hearings. This will reduce the review time for applicants and save some hearing fees.

It would appear advantageous, to allow installation of solar structures under a simple permit system, as is done with houses. However, problems with that system have been experienced. There are complaints about the glare from a solar collector and the noise from a wind generator in Missoula. In addition, defining solar collector is a difficult task. Many people assume solar collectors are the solar collectors offered at retail stores; others think 55-gallon drums filled with water qualify. The proposed regulations would ensure that any system will get neighborhood and OCD review to ensure that benefits for the applicant are not outweighed by the costs to other residents.

Adopting these changes to the zoning regulations will not result in widespread energy savings. The city and county should also review building codes and subdivision regulations to institute energy savings wherever and whenever possible. Subdivision amendments are being reviewed by the Missoula Planning Board. Zoning regulations, in Montana, do not govern lot orientation, road widths, street lighting, and shadow patterns (all subdivision concerns); or building insulation values, and heating and cooling systems (building codes). Other communities have initiated a review of all regulations that influence energy conservation. In Missoula, the process is different since three sets of regulations must be addressed: subdivision, zoning, and building codes.

These regulations address zoning issues only. OCD prepared subdivision regulation amendments, at the request of the Montana Department of Natural Resources and Conservation (DNRC). In addition, Missoula's City and County Energy Coordinator is working with the Montana Legislature to revise building codes.

A single document cannot address subdivision, zoning, and building codes. DNRC, BPA, and the Northwest Power Planning Council (NPPC) have all donated time and money to study these codes. The City of Missoula, Missoula County, and OCD are coordinating these efforts to save area residents energy, and as a result, money. It is OCD's hope that each proposal will be reviewed in light of these two concerns and that the Energy Conservation Board, the Missoula Planning Board, the City Council and the County Commissioners will contribute to the suggested amendments.

## BACKGROUND ON AMENDMENTS

### 1. SETBACKS FOR SOLAR ACCESS.

#### OCD Comment

Developers need flexibility to take advantage of innovative building designs that result in energy savings. Setback and lot size regulations sometimes restrict designs that could use energy more efficiently than conventional structures. Energy efficiency should be a criterion for review. This amendment is intended to allow a variance from setback regulations if it reduces energy use.

### 2. HEIGHT REQUIREMENTS FOR SOLAR ACCESS.

#### OCD Comment

Zoning can restrict the height and width of buildings. It can also protect solar access in many instances. Because height limitations do not consider variations in topography; these restrictions are not applicable to all solar access situations. This amendment would add flexibility to the process to encourage energy savings, without infringing on the rights of nearby property owners.



### 3. HEIGHT RESTRICTIONS TO PROMOTE SOLAR ACCESS.

#### CCD Comment

Height restrictions in single-family developments provide reasonably good solar access in most cases. However, when multi-family housing and single-family housing are mixed, current restrictions may not protect solar access. Relatively simple changes in design may provide this access at no additional cost.

### 4. FENCES AND HEDGES - PROHIBITION.

#### CCD Comment

Solar easements should prohibit buildings, trees, fences, and other obstructions from encroaching on solar airspace. This can be done in two ways: through zoning restrictions, and through private covenants.

Zoning can protect solar access in an entire zoning district, through codes such as those proposed in this document. Restrictive covenants can also protect solar access rights. Although not enforced by local government, such covenants have several advantages:

- A. Covenants can be used to thwart impending interference of solar access (usually by injunction) before construction begins, thus assuring a continuous supply of sunlight; and

B. The cost to the government is negligible; and

C. Governments can encourage or require covenants in new developments without burdening the public with costs for their institution or enforcement.

Landscaping and fences can deflect wind and reduce wind speeds. In addition, combinations of coniferous and deciduous trees, hedges, and ground covers, on the north and west sides of a structure, can protect buildings from wind. This reduces the infiltration of cold air, and in turn reduces heating costs. To realize this benefit, landscaping and fences must be carefully designed and located.

#### 5. ENERGY SAVINGS THROUGH CLUSTERING IN PLANNED UNIT DEVELOPMENTS.

##### OCD Comment

By reducing exterior surfaces, heating and cooling costs can be reduced. In addition, a central heating and cooling system can often be used when buildings are grouped together. This is not possible with widely separated structures. Clustering also encourages use of natural gas instead of electricity.

## 6. DENSITY BONUS FOR PLANNED-UNIT DEVELOPMENTS.

### OCD Comment

Traditional land-use controls are inflexible in unusual circumstances. Setbacks, densities, and the like, often prevent a developer from using a site's natural features. Grouping structures can give developers the flexibility to take full advantage of these features. Greater densities and design features of clustered structures improve heating and cooling efficiency.

Planned-unit developments allow a developer to design projects to meet health and safety standards, while saving energy by grouping buildings, reducing road widths, and planting trees to diminish the effects of wind. Planned-unit developments can include all the safeguards of traditional zoning while saving energy.

## PROPOSED ENERGY-EFFICIENT ZONING REGULATIONS

### 1. SETBACKS FOR SOLAR ACCESS

Any side-yard or rear-yard setback can be waived by OCD for solar access materials, equipment, or related structures, if the following conditions have been met:

- a. The owner(s) of the property(ies) adjacent to the applicant's property have signed a petition in favor of the project; and

b. Shading will not adversely affect other properties; and

c. Glare from the new structure will not be visible on other properties;  
and

d. Noise will not emanate from the materials, equipment, or structures  
that would be heard off the property, other than construction noise; and

e. The city's conditional-use ordinance is observed or, outside the city  
limits, the criteria found in this document and the city's conditional-use  
ordinance as adopted for county use, is observed.

## 2. HEIGHT REQUIREMENTS FOR SOLAR ACCESS

Height restrictions can be waived by OCD to allow use of solar access  
materials, equipment, or structures, if the following conditions have been met:

a. The owner(s) of the property(ies) adjacent to the applicant's property  
have signed a petition in favor of the project; and

b. Shading will not adversely affect other properties; and

c. Glare from the new structure will not be visible on other properties;  
and

d. Noise will not emanate from the materials, equipment, or structures  
that can be heard off the property other than construction noise; and

e. The city's conditional use ordinance is observed; or, outside the city limits, the criteria found in this section and the city's conditional-use ordinance as adopted for county use is observed.

### 3. HEIGHT RESTRICTIONS TO PROMOTE SOLAR ACCESS

Site plans submitted to the OCD shall include shadow patterns for:

- a. all proposed structures; and
- b. all structures located next to the new construction.

Shadow patterns shall be drawn based on data for noon on December 22, when the sun casts its longest shadows. No permit shall be issued by OCD that permits construction of a structure that will interfere with the solar access on a neighboring parcel, unless a variance has been granted by the city or county Board of Adjustment.

### 4. FENCES AND HEDGES - PROHIBITION

No fence or hedge shall be erected, or be permitted to remain that interferes with actual or potential solar access on another parcel. It shall be the responsibility of the owner of the affected parcel, to show that solar access is adversely affected by fences or hedges. It shall be the responsibility of the owner of the fence or hedge, to remove or lower the fence or hedge, to provide solar access to the neighboring parcel. All expenses shall be borne by the owner of the fence or hedge. OCD will determine if a fence or hedge must be removed or altered.

## 5. ENERGY SAVINGS THROUGH CLUSTERING

When possible, in developments that adhere to provisions of the Missoula Comprehensive Plan; buildings should be grouped to promote clustering of structures. Building clusters should be designed to provide solar access, to limit northern exposures, and to limit the number of exterior walls in the development.

## 6. DENSITY BONUS FOR PLANNED UNIT DEVELOPMENTS

Certain areas designated for development by the Comprehensive Plan, allow higher densities than specified under current zoning. Planned-unit development zoning should encourage densities the same as those recommended by the Comprehensive Plan provided the following conditions are met:

- a. The buildings are designed to use the sun's rays for heating purposes;
- b. The buildings are designed to use shading to promote cooling whenever possible;
- c. A landscaping plan is proposed that will shelter buildings from prevailing winds, without infringing upon the solar access of nearby lots;
- d. The buildings are designed and constructed following the guidelines established by NPPC; and

e. Parking areas are designed to promote the use of nonautomobile transportation. This will be done through establishment of bus pull-outs and bicycle parking; pedestrian and bicycle travel lanes will be provided; the width of road is reduced where possible; and landscaping is provided to reduce heat build-up in asphalted areas.

#### STANDARDS IN OTHER COMMUNITIES

While almost every aspect of land development affects energy use; energy efficiency depends, in part, on how a development is planned and then built. A list of land-use regulations adopted by other communities is included in this report. It is included to show what can be done with subdivision and building codes to help save energy. Some of the regulations are complex, others point out the need to consider easy methods of saving energy such as clotheslines.

#### UNDERGROUND HOUSING

Several communities have adopted building codes to permit energy-efficient underground housing. This type of housing is generally better insulated than conventional housing.

#### HOME OCCUPATIONS

By allowing a diversity of land use in residential areas, some communities have encouraged the establishment of home businesses. Savings in travel have resulted. Missoula currently has a home accessory-use ordinance which allows limited commercial use of residential property.

## MANDATORY SOLAR HEATING

San Diego County, California, adopted an ordinance that mandates use of solar-water heaters in new developments.

## DESIGN CRITERIA

Some communities established design criteria, including solar access, space heating, and shading, that are applied to new developments to save heating and cooling costs.

## SOLAR DRYERS

Davis, California, has deregulated clotheslines.

## PARKING REDUCTIONS

King County, Washington, permits a reduction in the number of required parking spaces if a development is close to shopping areas and mass-transit routes.

## SUBDIVISION REGULATIONS

Several communities have adopted subdivision regulations. Please refer to the OCD report "Energy-Efficient Subdivision Regulations" for more information.



## COSTS

BPA funded approximately \$12,100 of the CCD effort. These funds were supplemented by other grants and in-kind contributions aimed at incorporating energy-efficient considerations in subdivision regulations as well as in zoning ordinances. A summary of these funds follows:

<u>ITEM</u>	<u>COST</u>
Salaries (1250 hours)	\$11,383.00
Fringe Benefits	2,141.00
Office Supplies	525.00
Postage	50.00
Copies	75.00
Printing	120.00
Publications	300.00
Phone	<u>225.00</u>
TOTAL	\$14,819.00

ATTACHMENTS

Attachment Number

Bibliography. . . . .	1
Staff Letter: Subdivision and Zoning Relationships . . . . .	2

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## MISSOULA PLANNING OFFICE

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### Memorandum

TO: Kristina Ford  
FROM: Patrick O'Herren  
DATE: April 10, 1984  
RE: Grant Funded Regulation Review

#### ENERGY EFFICIENT SUBDIVISION REGULATIONS

(Montana Department of Natural Resources and Conservation)

In November of 1983, the Missoula Planning Staff obtained a grant to revise existing subdivision regulations to better conserve energy for City and County residents. The grant, sponsored by the Montana Department of Natural Resources and Conservation, entailed the researching of energy-related regulations in other communities, of literature pertaining to energy conservation and of existing state and local legislation as it relates to subdivision regulations. The staff also contacted approximately 100 individuals and agencies (both public and private) in the Missoula urban area in an attempt to obtain input prior to public hearings on proposed amendments to the City and County's regulatory ordinances.

On April 26th, the staff will present several proposed subdivision regulation amendments to the Missoula Valley Energy Conservation Board for their review. It is our hope that the Board will provide both their expertise and support when the amendments are presented to the Planning Board and the governing agencies in the next few months.



## ENERGY EFFICIENT ZONING REGULATIONS

(Bonneville Power Administration)

The Department of Natural Resources grant is intended to help study subdivision regulations while the Bonneville Power Administration has requested the Planning Staff to review existing zoning regulations. This review is intended to address those items which subdivision regulation cannot impact: setbacks, height restrictions, clustering so as to save energy costs, etc. The staff has divided this study into two separate parts:

1. A review of energy-related issues identified by the Energy Task Force (one of several task forces reviewing Missoula's Comprehensive Plan); and
2. A review of existing "barriers" to energy-efficient development imposed by current zoning codes.

The progress of the DNRC study has pointed out the necessity to include review of three forms of regulation that impact energy consumption: subdivision, zoning and building codes. By addressing at least two of these areas, the community may be able to save a considerable amount of energy-related money in the future.





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**Energy Division  
Capitol Station  
Helena, MT 59620**

**Montana Department of  
Natural Resources and Conservation**

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